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 FILE LAST UPDATED: 1 Aug 2005 (20050801/ED)

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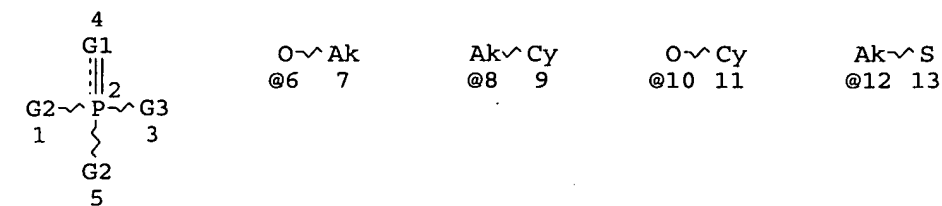
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| 1 3 | | | | |
| G2 | | | | |
| 5 | | | | |

S~ Ak
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 DEFAULT ECLEVEL IS LIMITED

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STEREO ATTRIBUTES: NONE
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 L3 STR



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STEREO ATTRIBUTES: NONE

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L5 5443 SEA FILE=HCAPLUS ABB=ON PLU=ON L4
L6 15230 SEA FILE=HCAPLUS ABB=ON PLU=ON (ALCOHOLYSIS/CV OR METHANOLYSI
S/CV OR "METHANOLYSIS CATALYSTS"/CV OR "METHANOLYSIS KINETICS"/
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L7 31 SEA FILE=HCAPLUS ABB=ON PLU=ON L5 AND L6

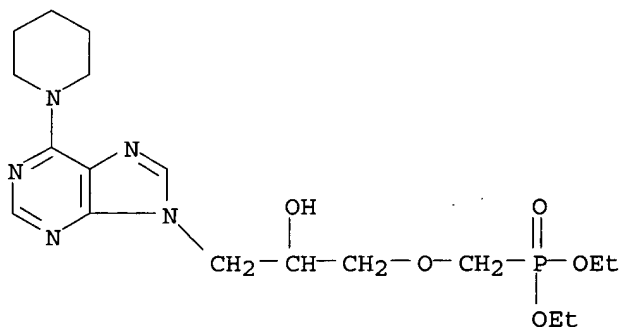
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L7 ANSWER 1 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:937501 HCAPLUS
DOCUMENT NUMBER: 143:97589
TITLE: Synthesis of N9- and N7-[2-hydroxy-3-(phosphonomethoxy)-propyl] derivatives of N6-substituted adenines, 2,6-diaminopurines and related compounds
AUTHOR(S): Krecmerova, Marcela; Masojidkova, Milena; Holy, Antonin
CORPORATE SOURCE: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Prague, 166 10/6, Czech Rep.
SOURCE: Collection of Czechoslovak Chemical Communications (2004), 69(10), 1889-1913
CODEN: CCCCAK; ISSN: 0010-0765
PUBLISHER: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

- AB Base-catalyzed reactions of di-Et [(oxiranylmethoxy)methyl]phosphonate (I) with purine bases (adenine, 2,6-diaminopurine, 6-chloropurine and 2-amino-6-chloropurine) gave corresponding 9- or 7-[2-hydroxy-3-(phosphonomethoxy)propyl] purines. The adenine and 2,6-diaminopurine derivs. cyclize to cyclic phosphonates II (R2 = H, NH2). The 9-[2-hydroxy-3-(phosphonomethoxy)propyl] derivs. of N6-substituted adenine and 2,6-diaminopurine were prepared by the treatment of di-Et {[3-(6-chloropurin-9-yl)-2-hydroxy-propoxy]methyl}phosphonate (III; R3 = H) or di-Et {[3-(2-amino-6-chloropurin-9-yl)-2-hydroxy-propoxy]methyl}phosphonate (III; R3 = NH2) with primary or secondary amines. The reaction of 6-chloro- or 2-amino-6-chloropurine derivs. III with thiourea gave the corresponding di-Et purine-6-thiol or 2-aminopurine-6-thiol phosphonates IV (R4 = H, NH2; X = S). The guanine derivative IV (R4 = NH2; X = O) was prepared by the treatment of III (R3 = NH2) with 80% acetic acid. All di-Et phosphonates were transformed to free phosphonic acids by the action of bromotrimethylsilane and subsequent hydrolysis.
- IT 856259-23-9P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and hydrolysis of; synthesis of [2-hydroxy-3-(phosphonomethoxy)propyl] derivs. of N6-substituted adenines and 2,6-diaminopurines)
- RN 856259-23-9 HCAPLUS
 CN Phosphonic acid, [[2-hydroxy-3-[6-(1-piperidinyl)-9H-purin-9-yl]propoxy]methyl]-, diethyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2003:661395 HCAPLUS
 DOCUMENT NUMBER: 140:217902
 TITLE: A new type of labelling of nucleosides and nucleotides
 AUTHOR(S): Sigmund, Harald; Pfleiderer, Wolfgang
 CORPORATE SOURCE: Fachbereich Chemie, Universitaet Konstanz, Konstanz, D-78457, Germany
 SOURCE: Helvetica Chimica Acta (2003), 86(7), 2299-2334
 CODEN: HCACAV; ISSN: 0018-019X

PUBLISHER: Verlag Helvetica Chimica Acta
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB A new labeling technique attaching fluorescein via a carbamoyl linker directly to the amino groups of the nucleobases was developed. The amino groups were first converted to the phenoxycarbonyl derivs., which reacted under mild conditions with 5-aminofluorescein to give the corresponding N-[(fluorescein-5-ylamino)carbonyl] derivs. The introduction of the 5-aminofluorescein residue into properly protected adenylyl-adenosine dimers and trimer worked well, and final deprotection of these uniformly blocked precursors led on treatment with DBU (1,8-diazabicyclo[5.4.0]undec-7-ene), in one step to dimer and trimer. Synthesis of an appropriately protected monomeric phosphoramidite building block I [R = dimethoxytrityl, R1 = P{N(CHMe2)2}OCH2CH2C6H4NO2-4, R2 = R3 = npe, R4 = H; npe = CH2CH2C6H4NO2-4] was more difficult, since introduction of the 2-(4-nitrophenyl)ethyl residue into the fluorescein moiety in I [RR1 = Si(CHMe2)2OSi(CHMe2)2, R2 = R3 = npe, R4 = H] led mainly to trisubstitution to give I [RR1 = Si(CHMe2)2OSi(CHMe2)2, R2 = R3 = R4 = npe] including the urea function. Formation of the adenylyl dimer II (R = H; npeoc = CO2CH2CH2C6H4NO2-4) and trimer II (R = R') proceeded in the usual manner by phosphoramidite chemical; however, deprotection of II (R = R') with DBU was incomplete since the O-alkyl group at the urea moiety was found to be very stable. Finally, the appropriate phosphoramidite building block I [R = dimethoxytrityl, R1 = P{N(CHMe2)2}OCH2CH2C6H4NO2-4, R2 = R3 = npe, R4 = H; npe = CH2CH2C6H4NO2-4] could be synthesized by the sequence I [R = dimethoxytrityl, R1 = P{N(CHMe2)2}OCH2CH2C6H4NO2-4, R2 = R3 = npe, R4 = H; npe = CH2CH2C6H4NO2-4] → I [R = dimethoxytrityl, R1 = P{N(CHMe2)2}OCH2CH2C6H4NO2-4, R2 = R3 = npe, R4 = H]. The phosphoramidite I [R = dimethoxytrityl, R1 = P{N(CHMe2)2}OCH2CH2C6H4NO2-4, R2 = R3 = npe, R4 = H] was used for the synthesis of a dimer and a trimer by solution chemical, as well as for that of various oligonucleotides by the machine-aided approach on solid support carrying the fluorophore at different positions of the chain. The attachment of the fluorescein fluorophore via a short carbamoyl linker onto the 6-amino group of 2'-deoxyadenosine enables such mols. to function very well in fluorescence-polarization expts.

IT 195875-03-7P 663918-62-5P 663918-68-1P
 663918-71-6P

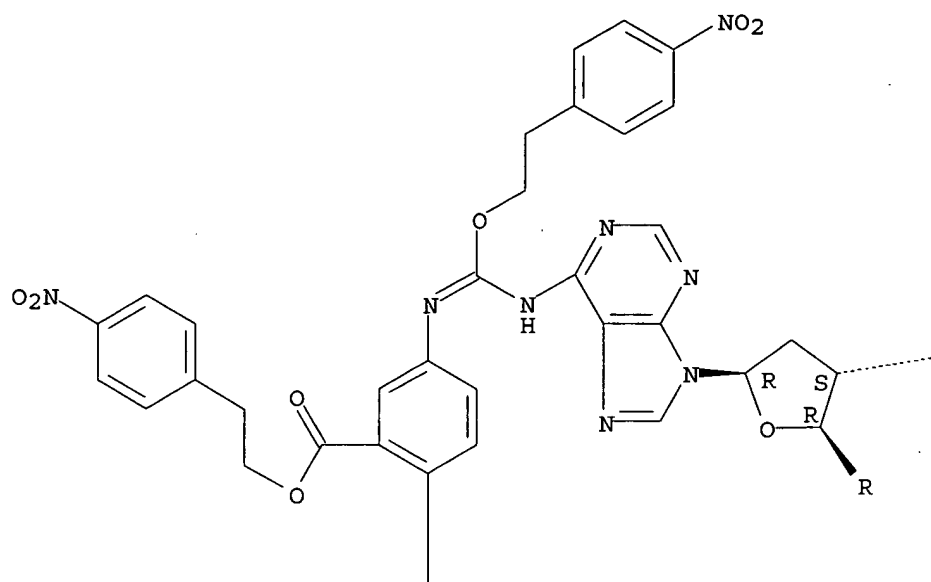
RL: SPN (Synthetic preparation); PREP (Preparation)
 (new type of fluorescein labeling of nucleosides and nucleotides)

RN 195875-03-7 HCAPLUS

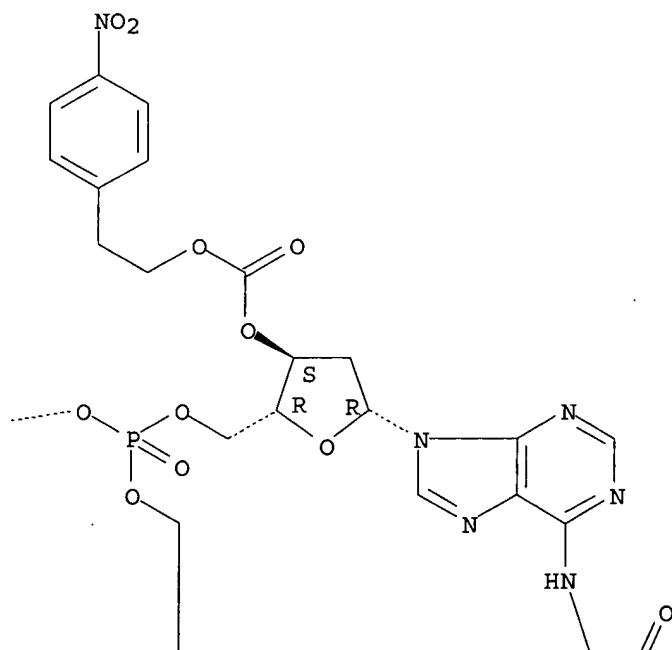
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Absolute stereochemistry.

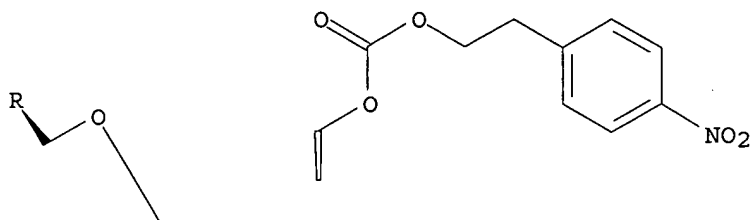
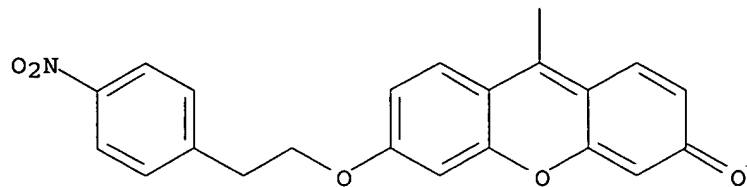
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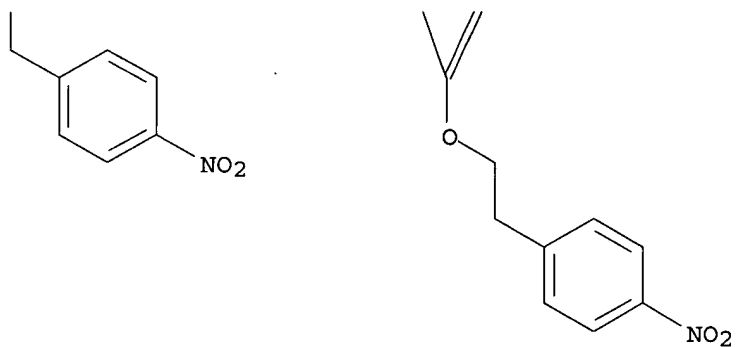
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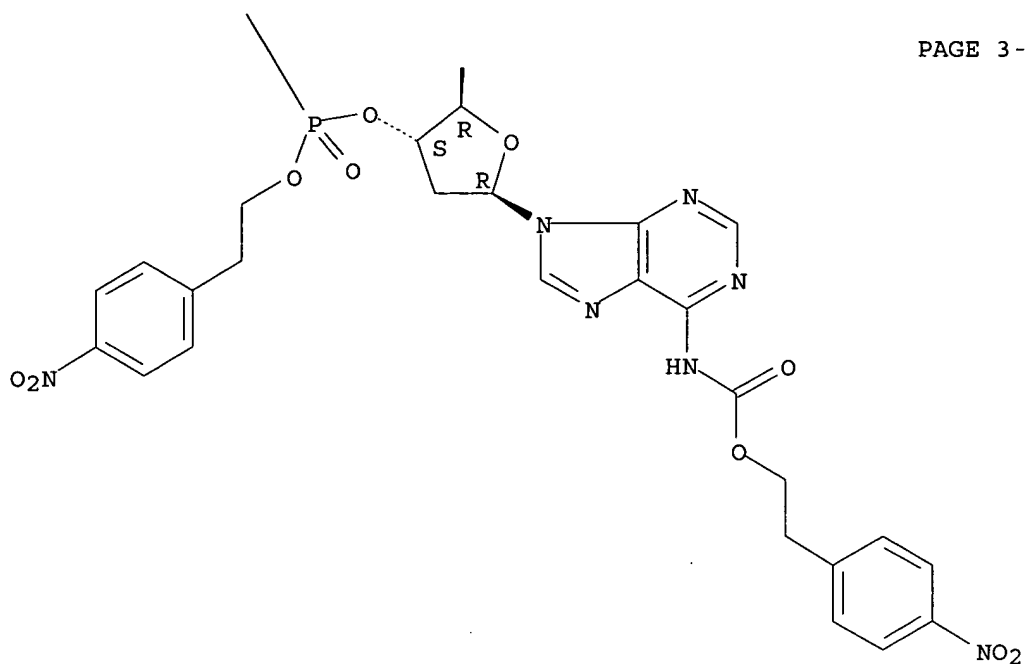
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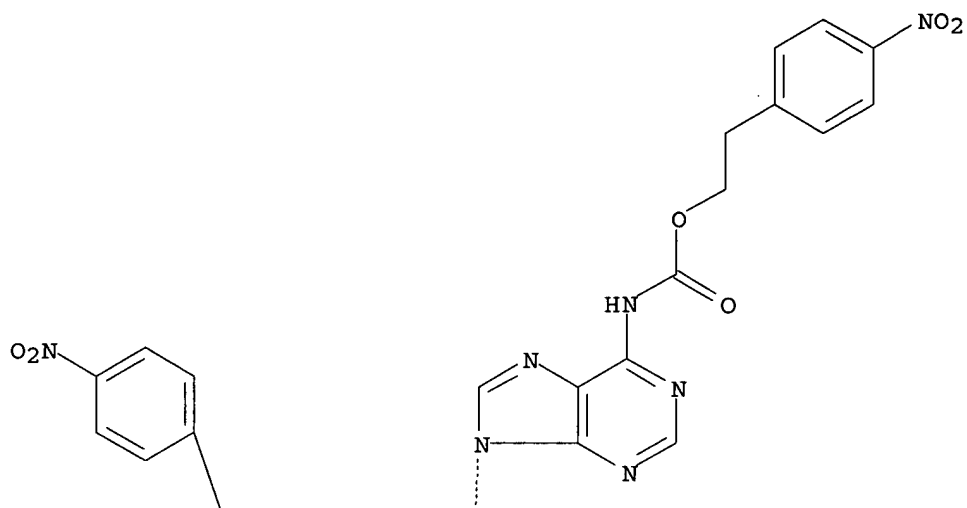


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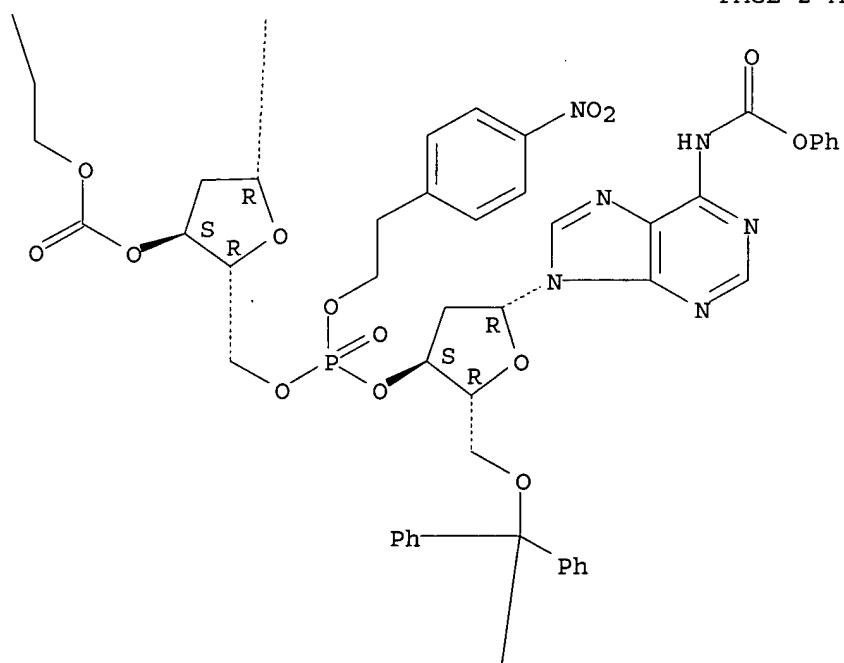
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Absolute stereochemistry.

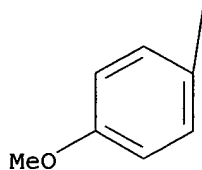
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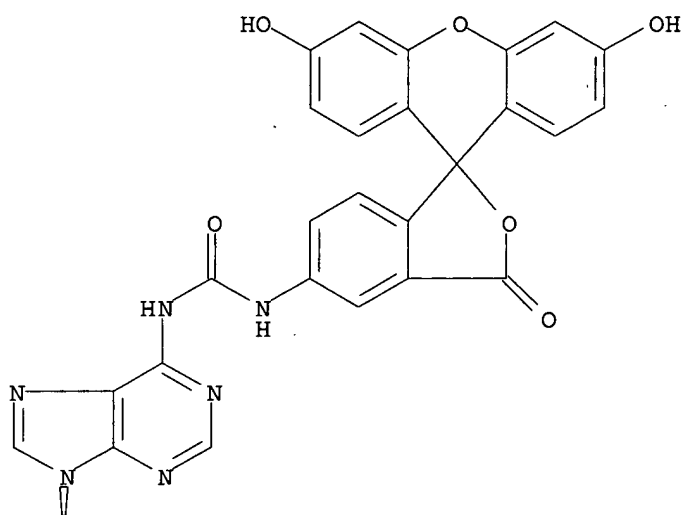
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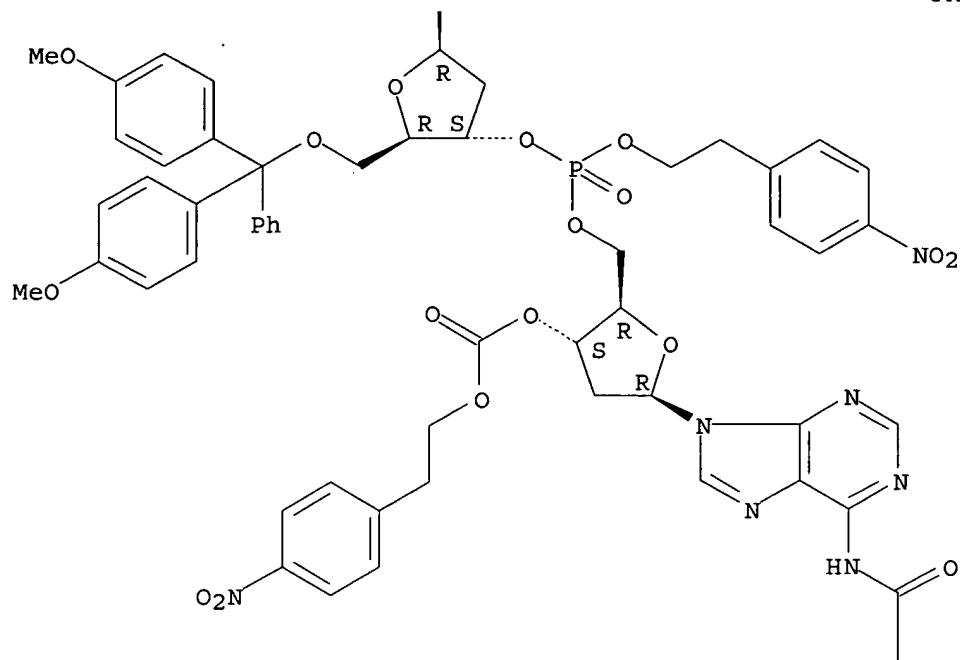
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Absolute stereochemistry.

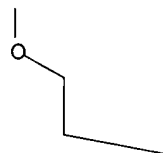
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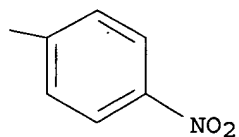
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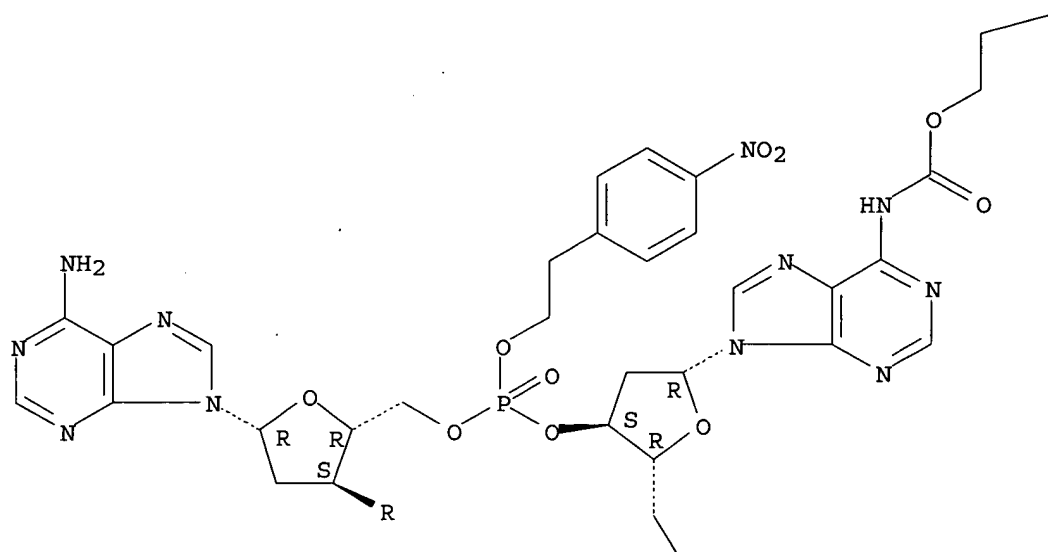
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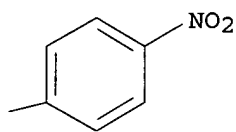
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Absolute stereochemistry.

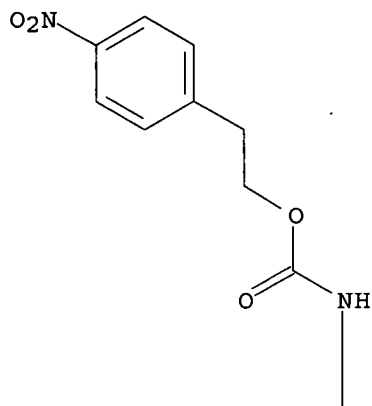
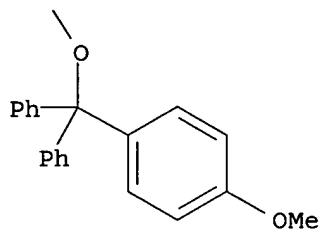
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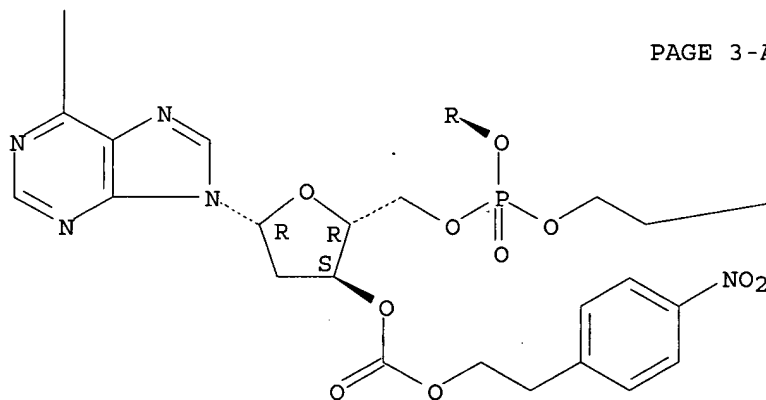
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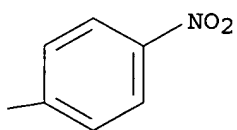
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IT 153155-01-2P

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(Reactant or reagent)

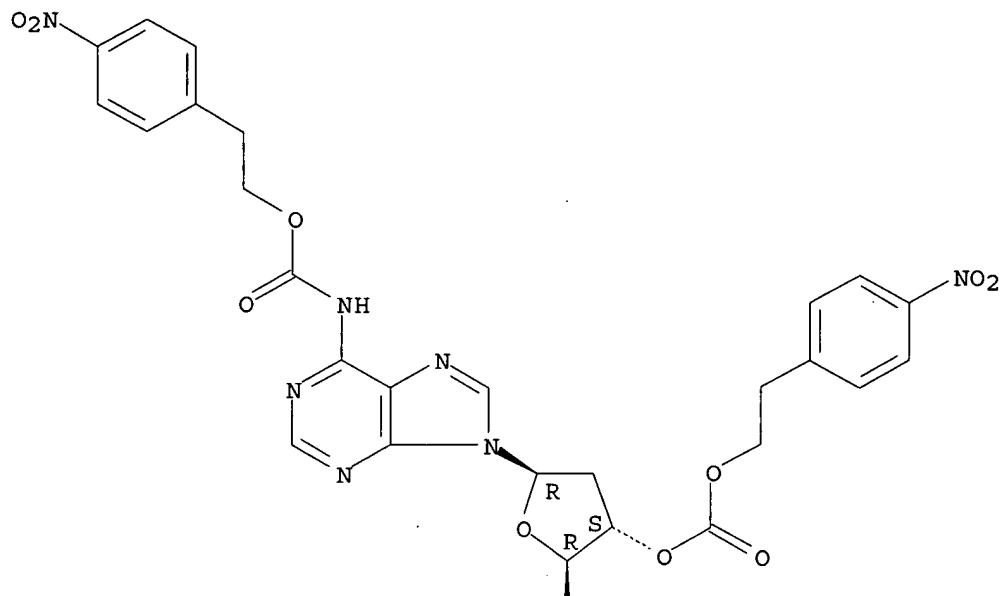
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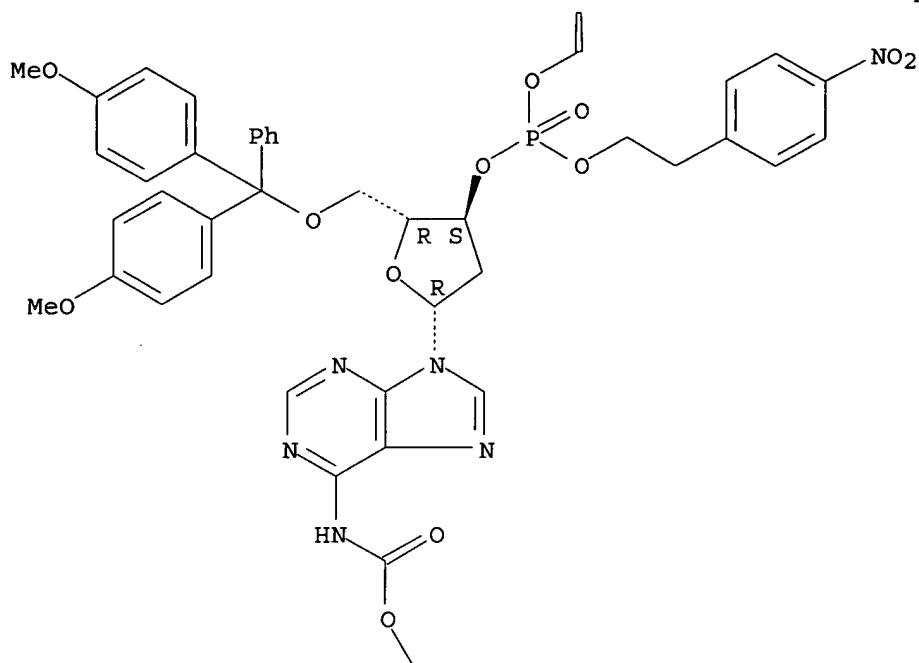
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Absolute stereochemistry.

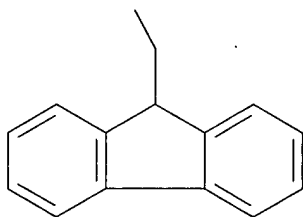
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IT 153120-96-8P 195874-97-6P 663918-55-6P

663918-70-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

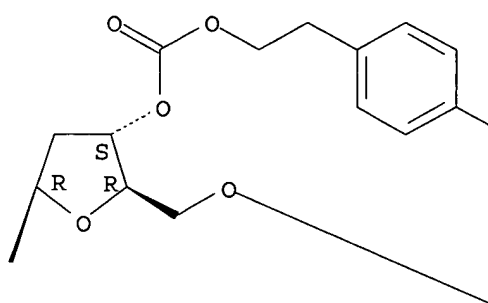
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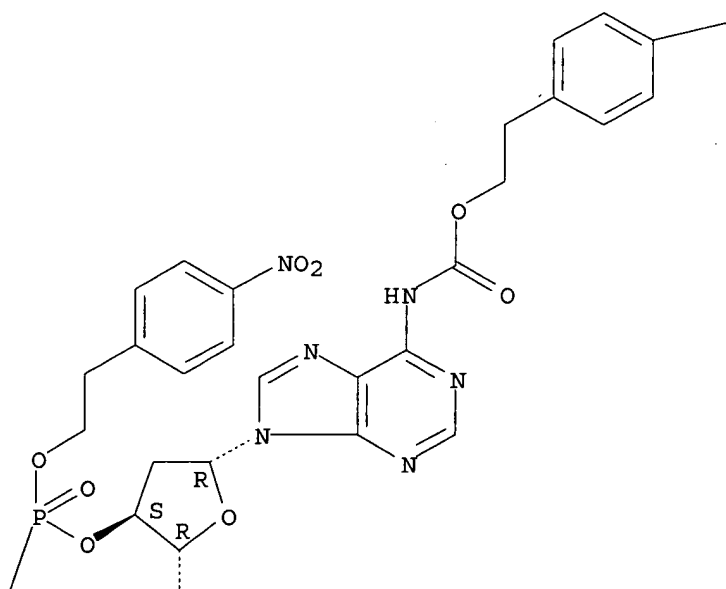
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Absolute stereochemistry.

PAGE 1-A



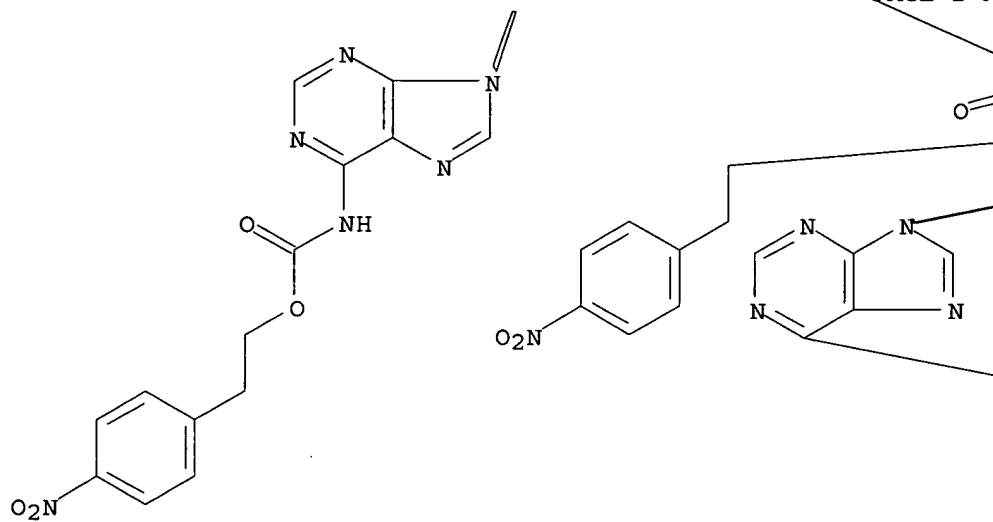
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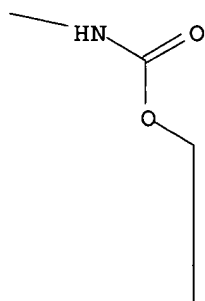
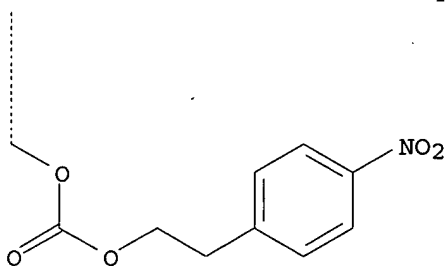
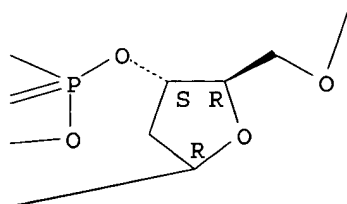
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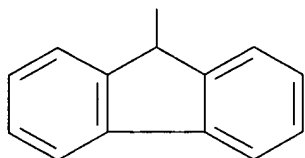
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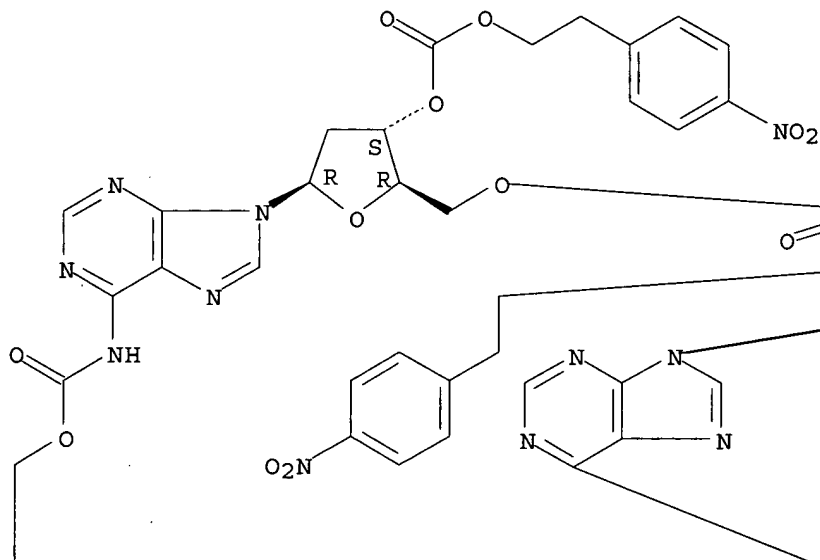


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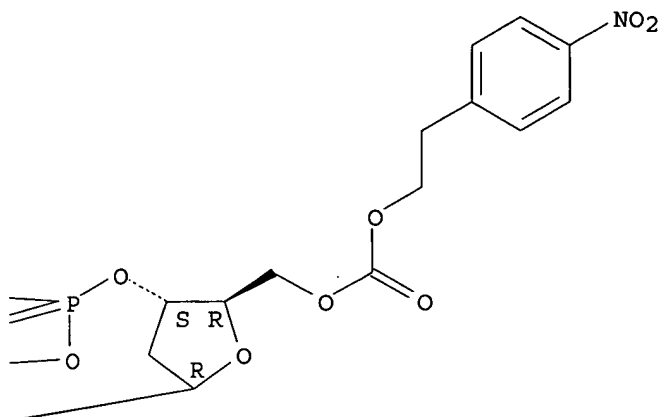
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Absolute stereochemistry.

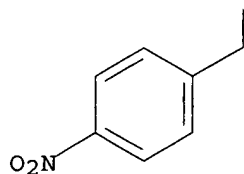
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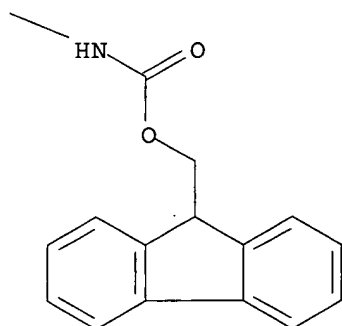
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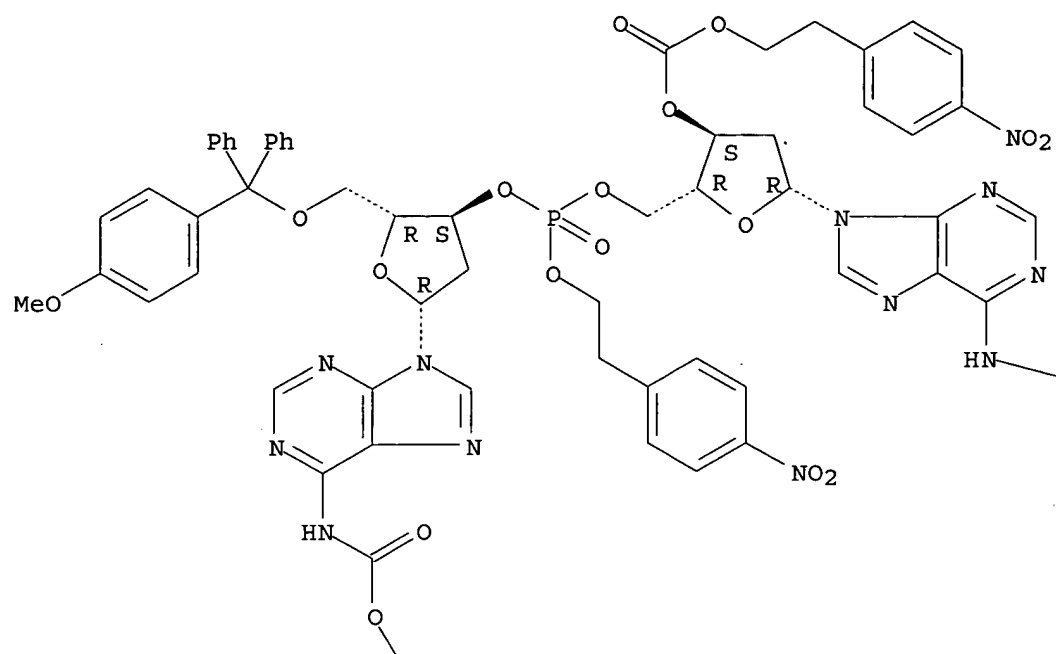


RN 663918-55-6 HCAPLUS

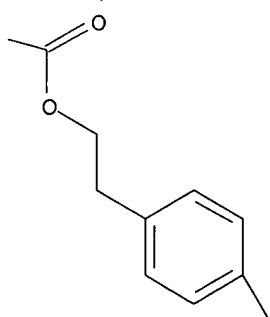
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Absolute stereochemistry.

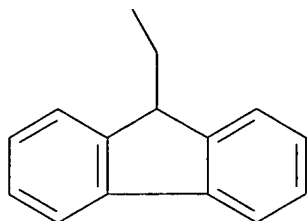
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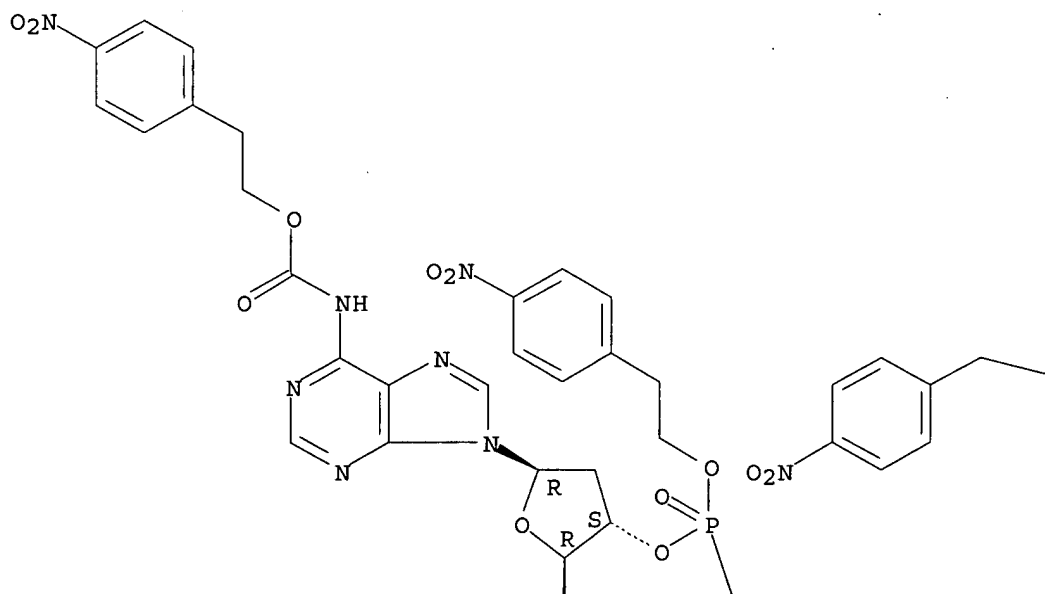
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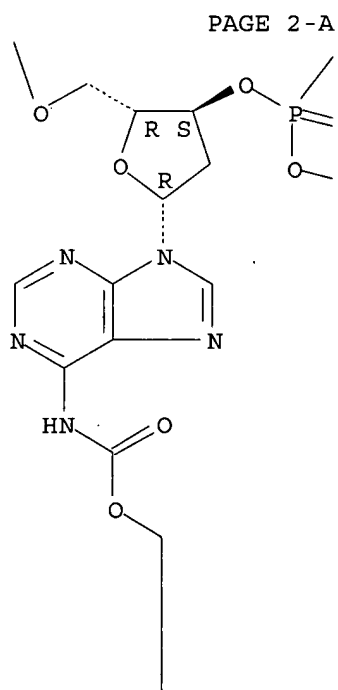
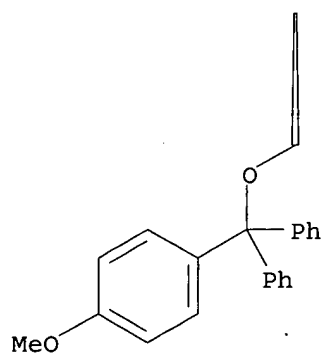
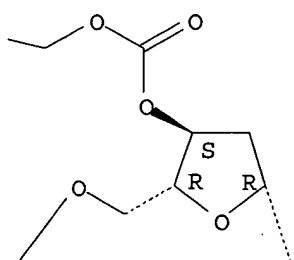


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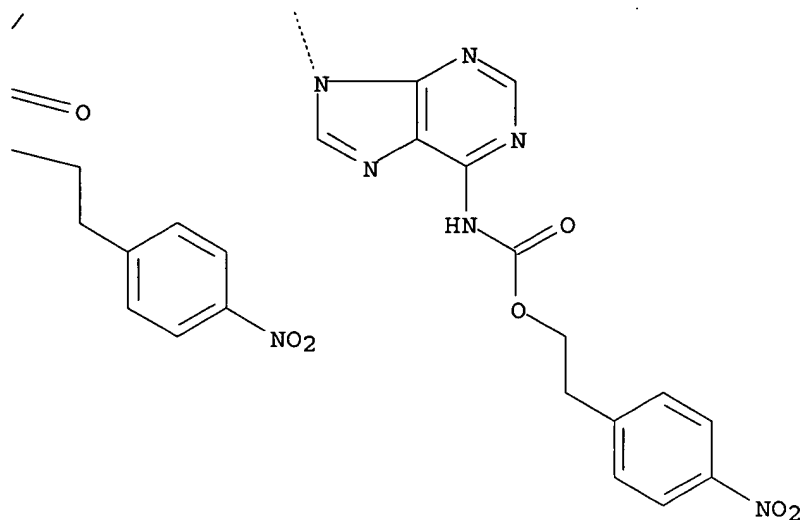
Absolute stereochemistry.

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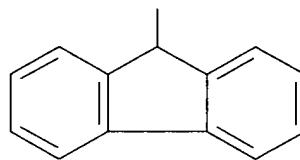




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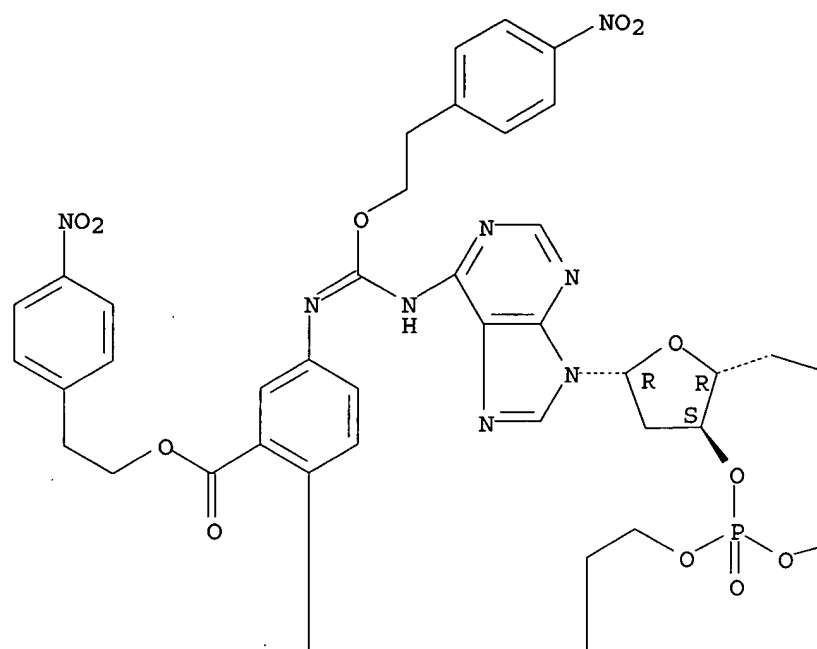
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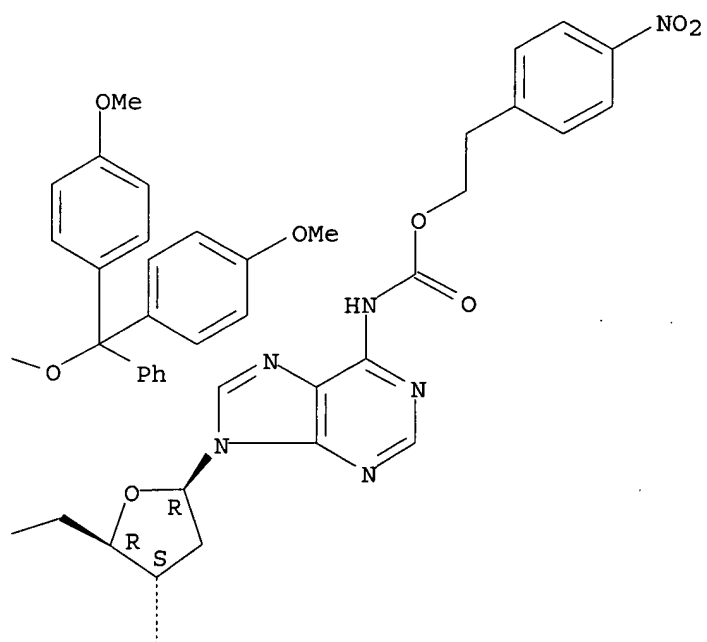
IT 663918-80-7P 663918-87-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and detritylation of; new type of fluorescein labeling of
 nucleosides and nucleotides)
 RN 663918-80-7 HCAPLUS
 CN Adenosine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-N-[[2-(4-
 nitrophenyl)ethoxy][[3-[[2-(4-nitrophenyl)ethoxy]carbonyl]-4-[6-[2-(4-
 nitrophenyl)ethoxy]-3-oxo-3H-xanthen-9-yl]phenyl]amino]methylene]-P-[2-(4-
 nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-
 nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI)
 (CA INDEX NAME)

Absolute stereochemistry.

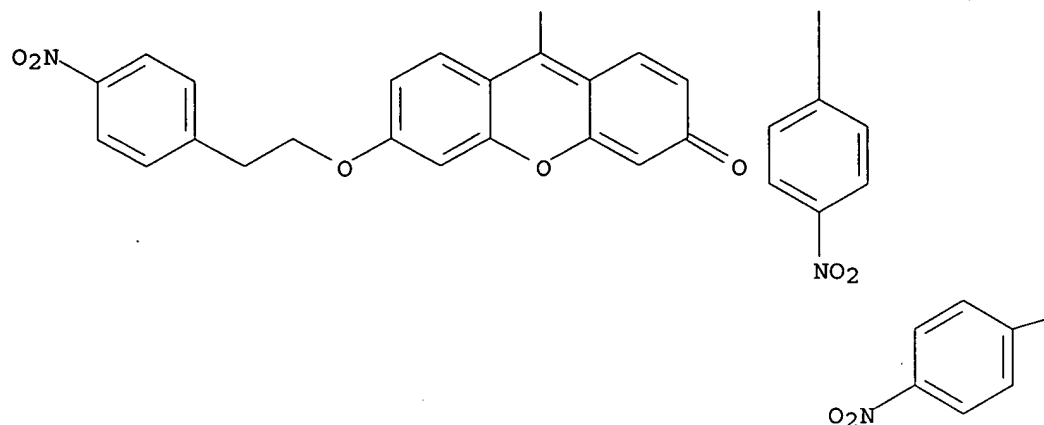
PAGE 1-A



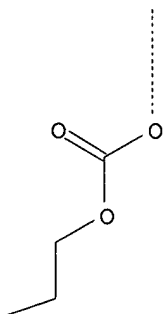
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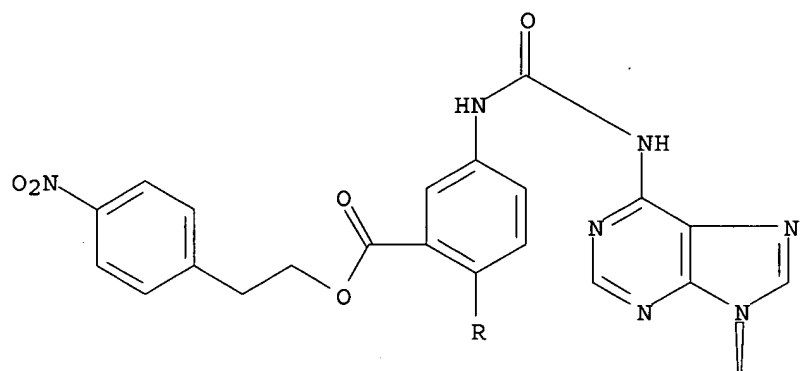
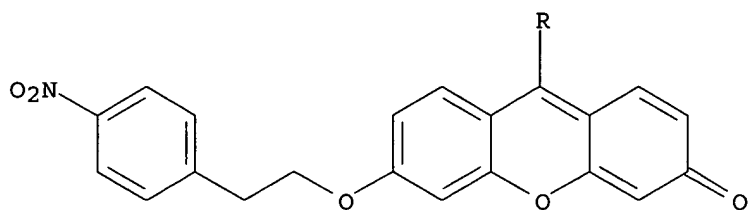
PAGE 2-B



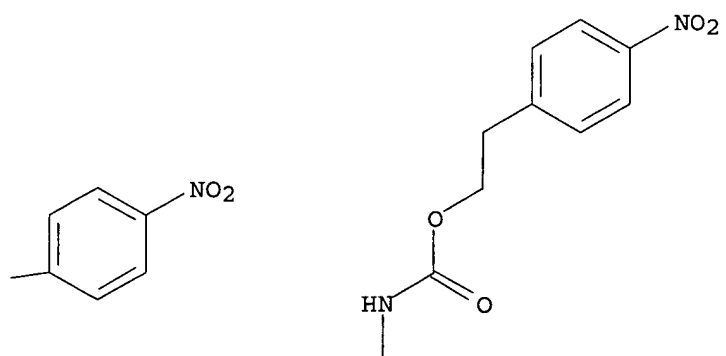
RN 663918-87-4 HCAPLUS
 CN Adenosine, 5'-O- [bis (4-methoxyphenyl)phenylmethyl] -2'-deoxy-N-[[[3-[[2-(4-nitrophenyl)ethoxy]carbonyl]-4-[6-[2-(4-nitrophenyl)ethoxy]-3-oxo-3H-xanthen-9-yl]phenyl]amino]carbonyl]-P-[2-(4-nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

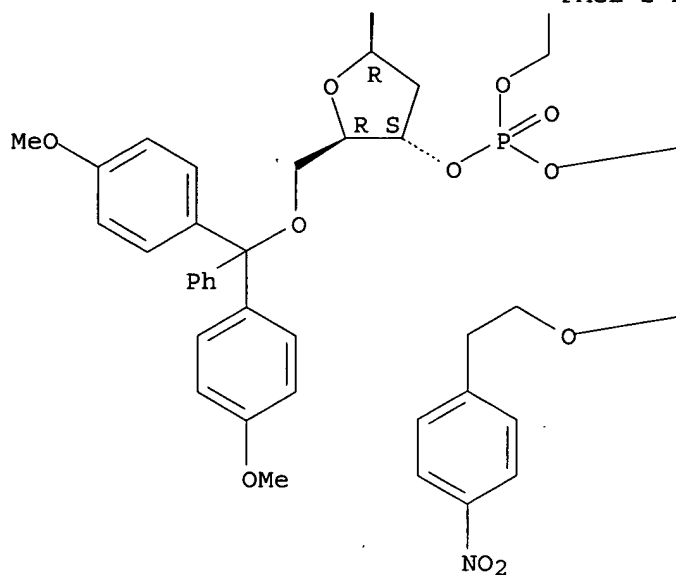
PAGE 1-A



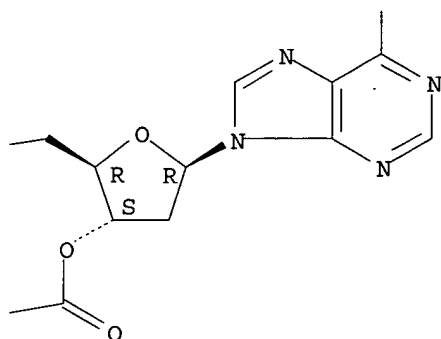
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IT 195874-98-7P

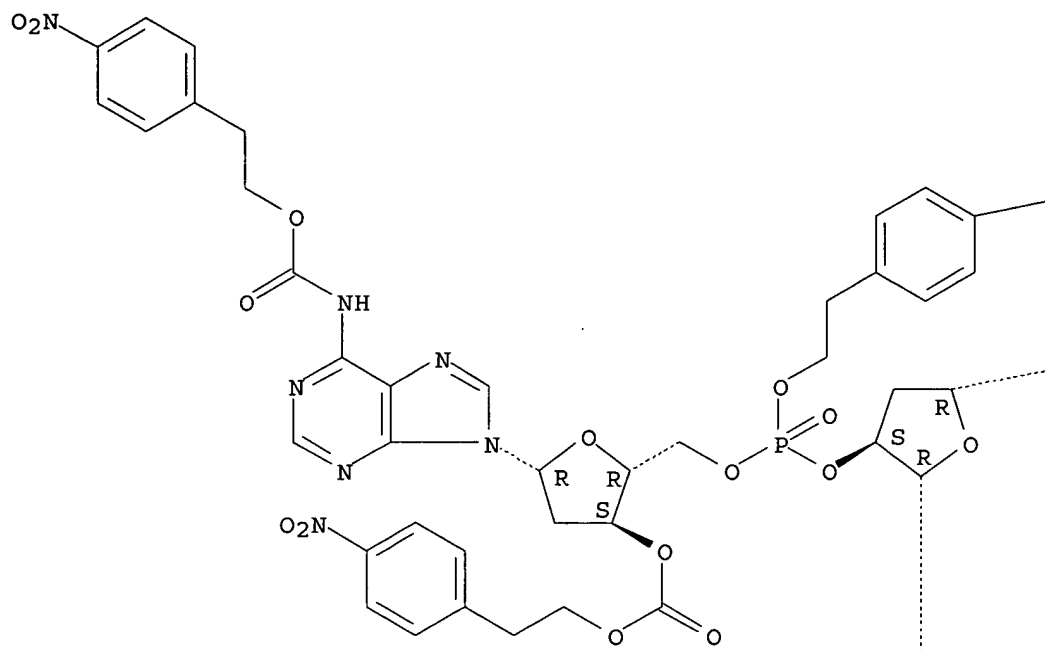
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and ethoxycarbonylation of; new type of fluorescein labeling of nucleosides and nucleotides)

RN 195874-98-7 HCAPLUS

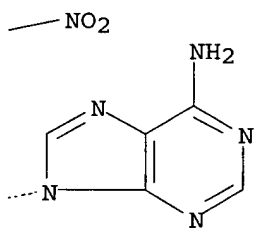
CN Adenosine, 2'-deoxy-5'-O-[[2-(4-nitrophenyl)ethoxy]carbonyl]-P-[2-(4-nitrophenyl)ethyl]adenyl-yl-(3'→5')-2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

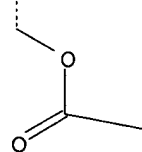
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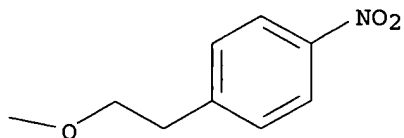
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IT 153146-09-9P 663918-58-9P 663918-60-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

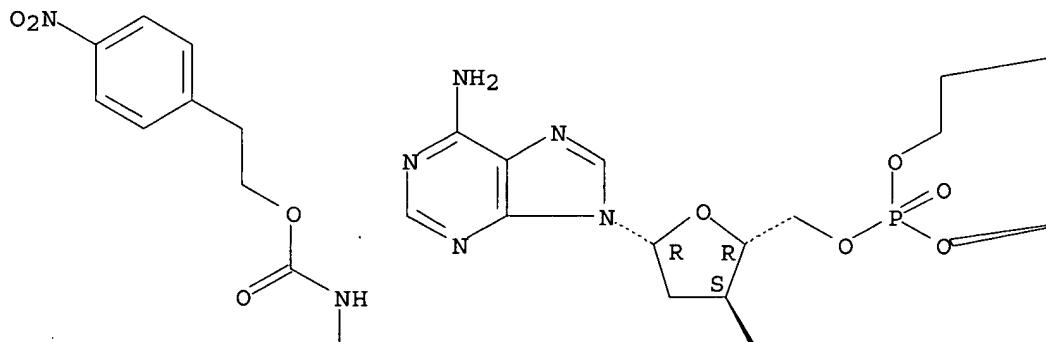
(preparation and phenoxycarbonylation of; new type of fluorescein labeling of nucleosides and nucleotides)

RN 153146-09-9 HCAPLUS

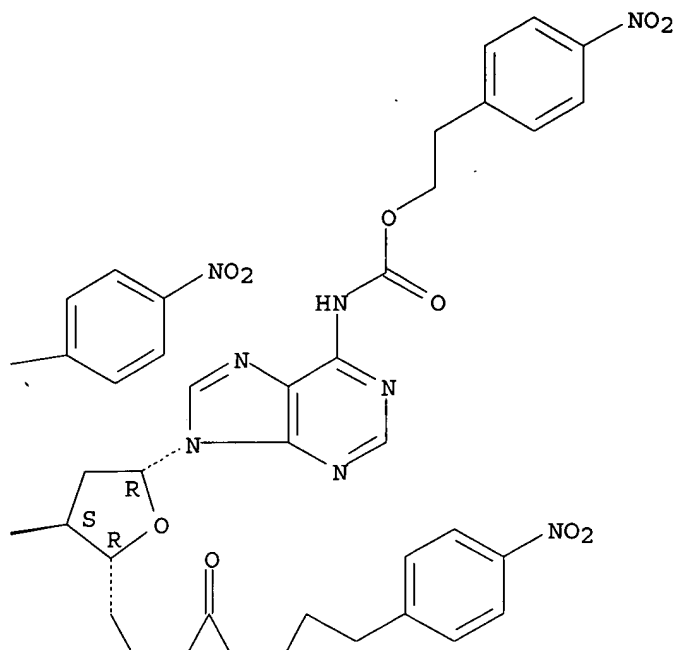
CN Adenosine, 2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-5'-O-[[2-(4-nitrophenyl)ethoxy]carbonyl]-P-[2-(4-nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-P-[2-(4-nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

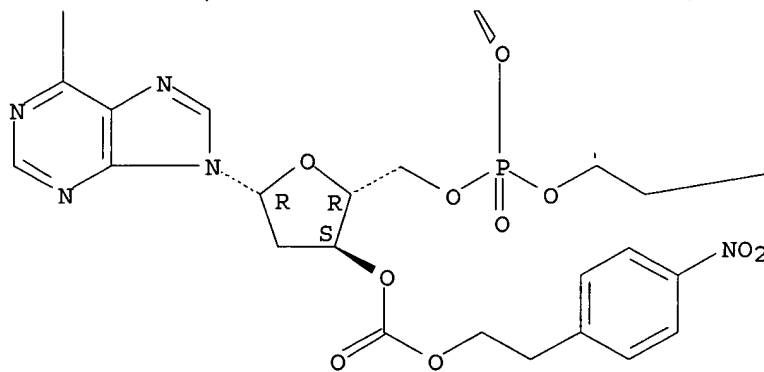
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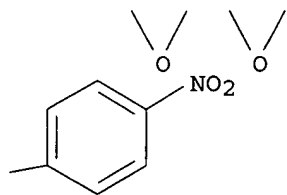
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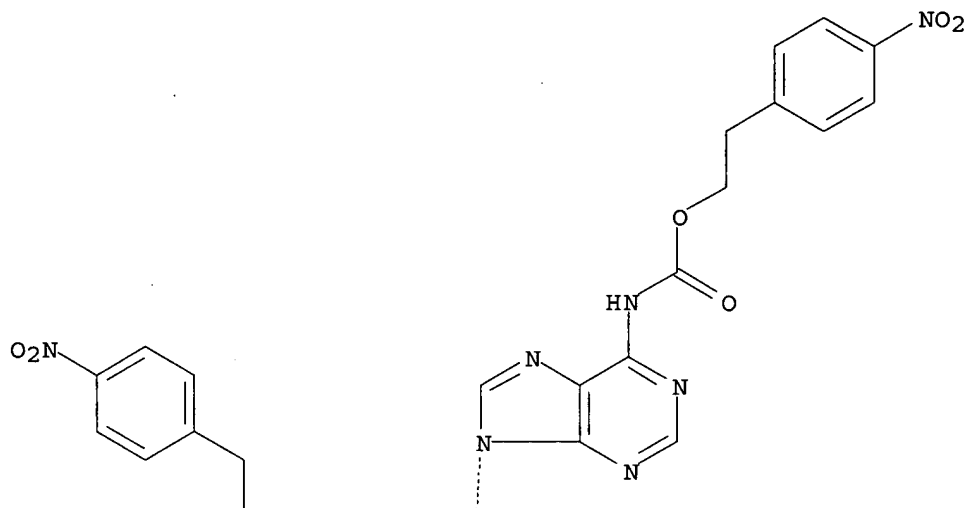


RN 663918-58-9 HCAPLUS
CN Adenosine, 2'-deoxy-5'-O-[(4-methoxyphenyl)diphenylmethyl]-P-[2-(4-

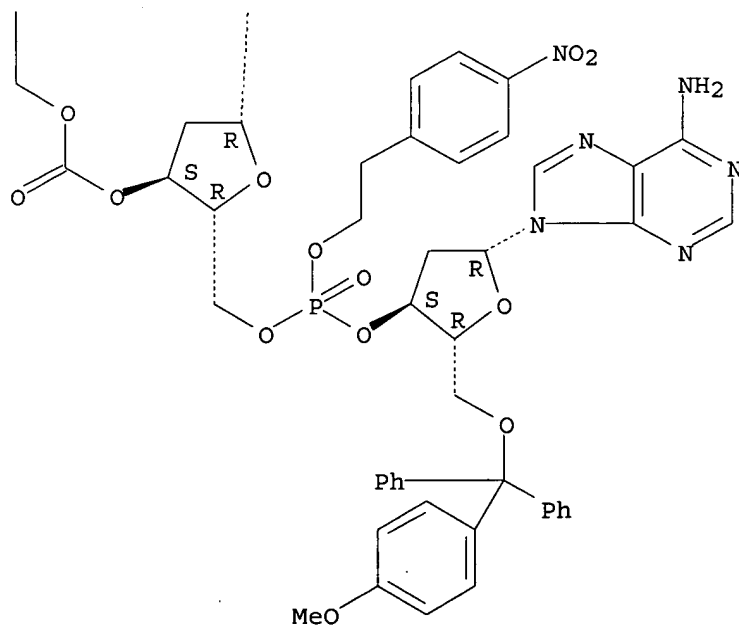
nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

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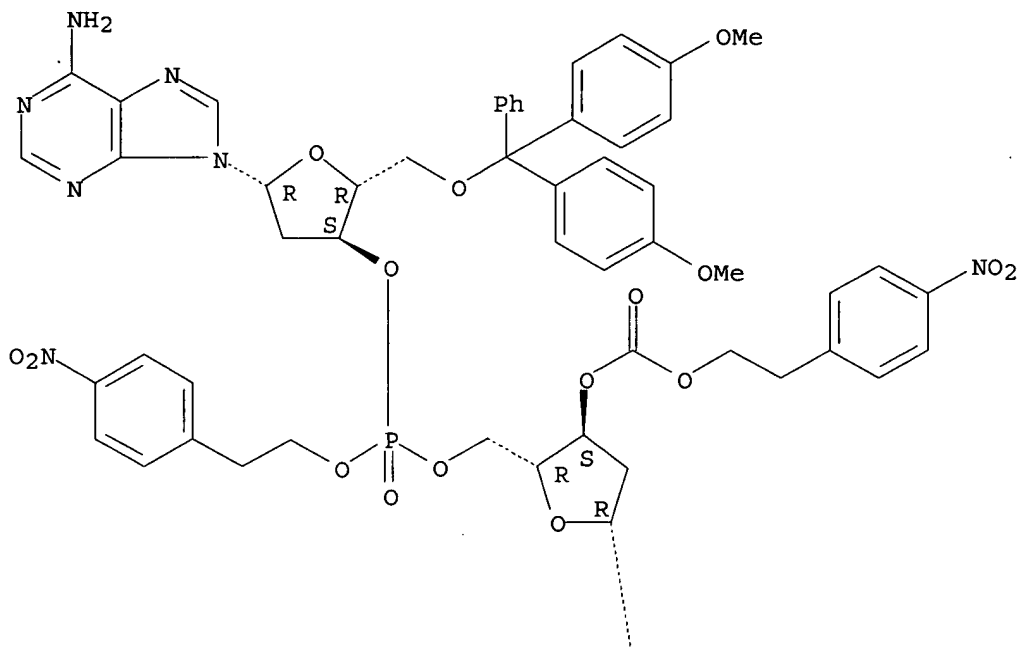


RN 663918-60-3 HCAPLUS

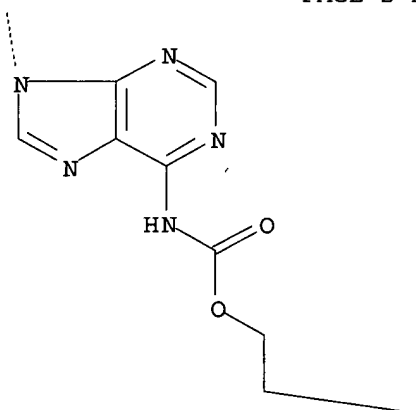
CN Adenosine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-P-[2-(4-nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI)
(CA INDEX NAME)

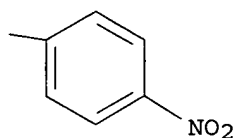
Absolute stereochemistry.

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IT 663918-88-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

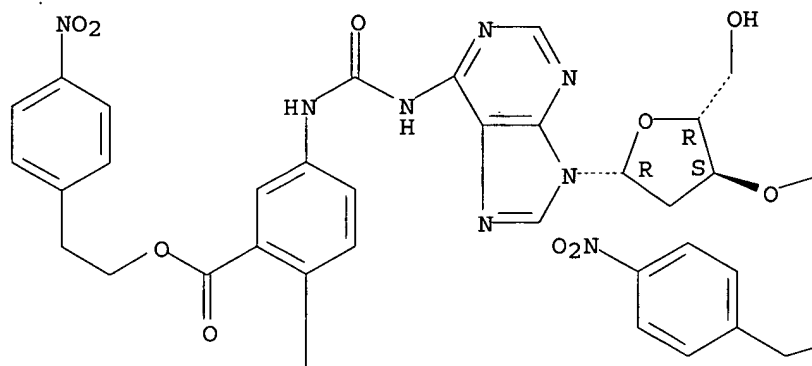
(preparation and reaction of, with adenosine phosphoramidate; new type of fluorescein labeling of nucleosides and nucleotides)

RN 663918-88-5 HCAPLUS

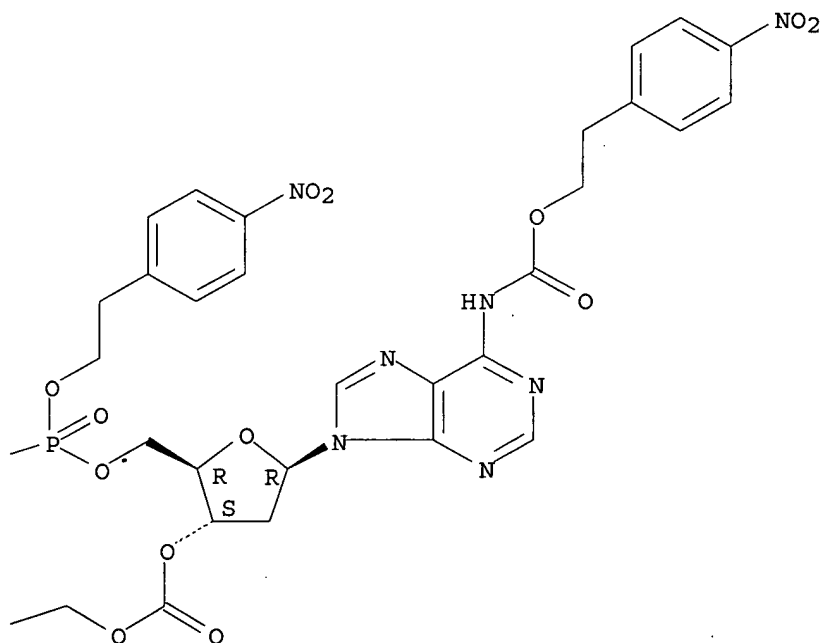
CN Adenosine, 2'-deoxy-N-[[[3-[[2-(4-nitrophenyl)ethoxy]carbonyl]-4-[6-[2-(4-nitrophenyl)ethoxy]-3-oxo-3H-xanthen-9-yl]phenyl]amino]carbonyl]-P-[2-(4-nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

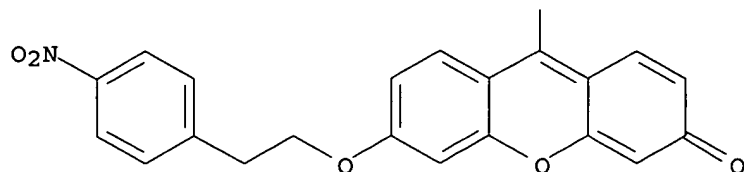
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IT 663918-82-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

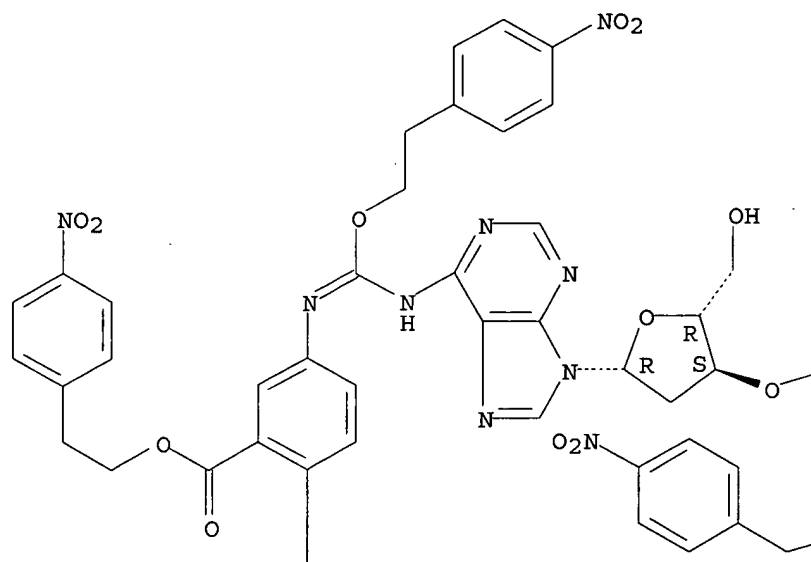
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(preparation and reaction of, with adenosine phosphoramidite; new type of
fluorescein labeling of nucleosides and nucleotides)
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RN 663918-82-9 HCAPLUS

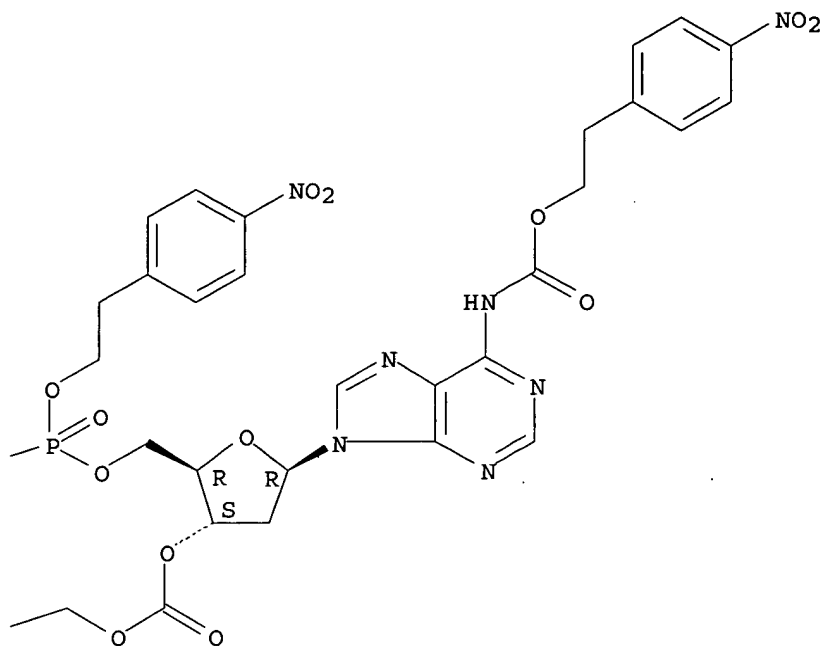
| | |
|----|--|
| CN | Adenosine, 2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy][[3-[[2-(4-nitrophenyl)ethoxy]carbonyl]-4-[6-[2-(4-nitrophenyl)ethoxy]-3-oxo-3H-xanthen-9-yl]phenyl]amino]methylene]-P-[2-(4-nitrophenyl)ethyl]adenyl-yl-3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI) (CA INDEX NAME) |
|----|--|

Absolute stereochemistry.

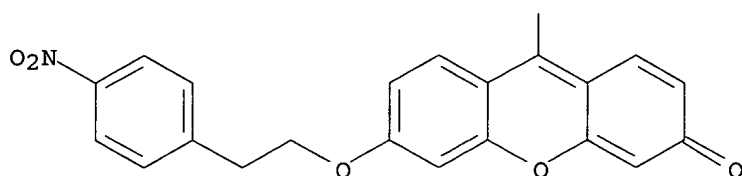
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IT 663918-64-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

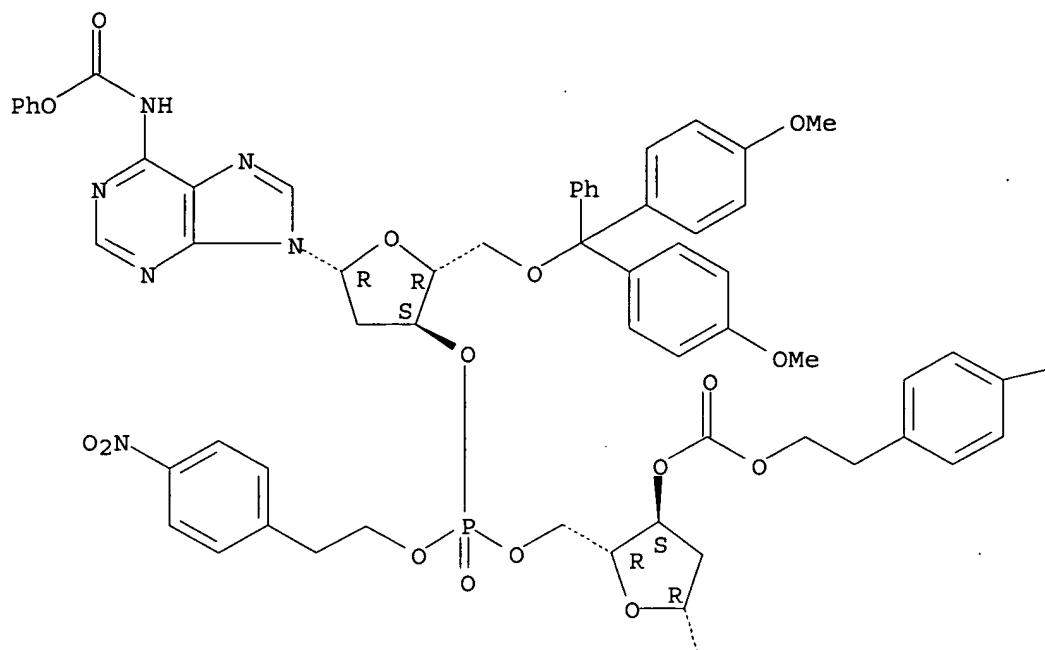
(preparation and reaction of, with aminofluorescein ester; new type of fluorescein labeling of nucleosides and nucleotides)

RN 663918-64-7 HCAPLUS

CN Adenosine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-P-[2-(4-nitrophenyl)ethyl]-N-(phenoxycarbonyl)adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

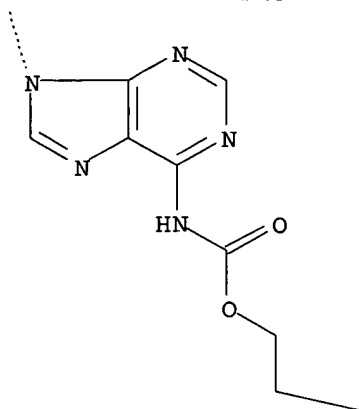
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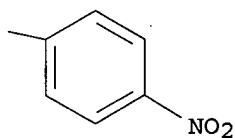
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—NO₂

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IT 153120-97-9P 195874-99-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

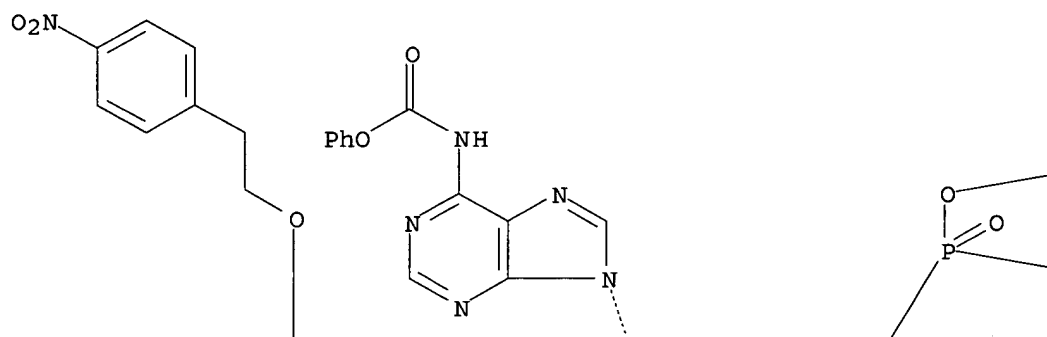
(preparation and reaction of, with aminofluorescein; new type of fluorescein labeling of nucleosides and nucleotides)

RN 153120-97-9 HCAPLUS

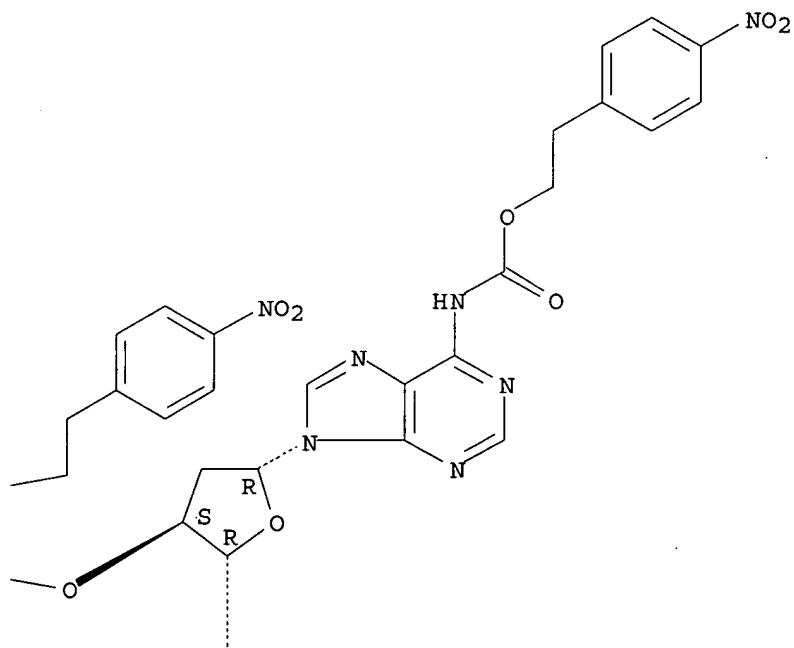
CN Adenosine, 2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-5'-O-[[2-(4-nitrophenyl)ethoxy]carbonyl]-P-[2-(4-nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-P-[2-(4-nitrophenyl)ethyl]-N-(phenoxy carbonyl)adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

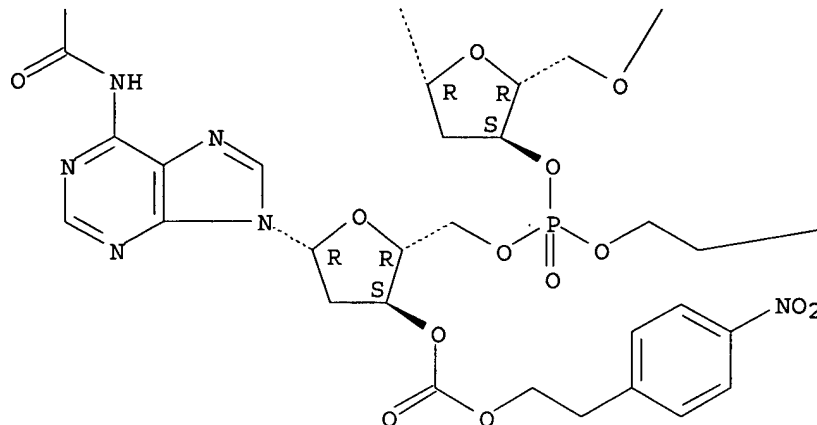
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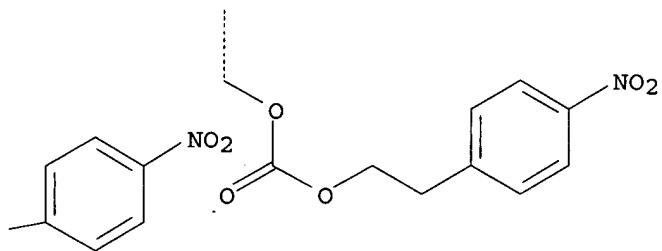
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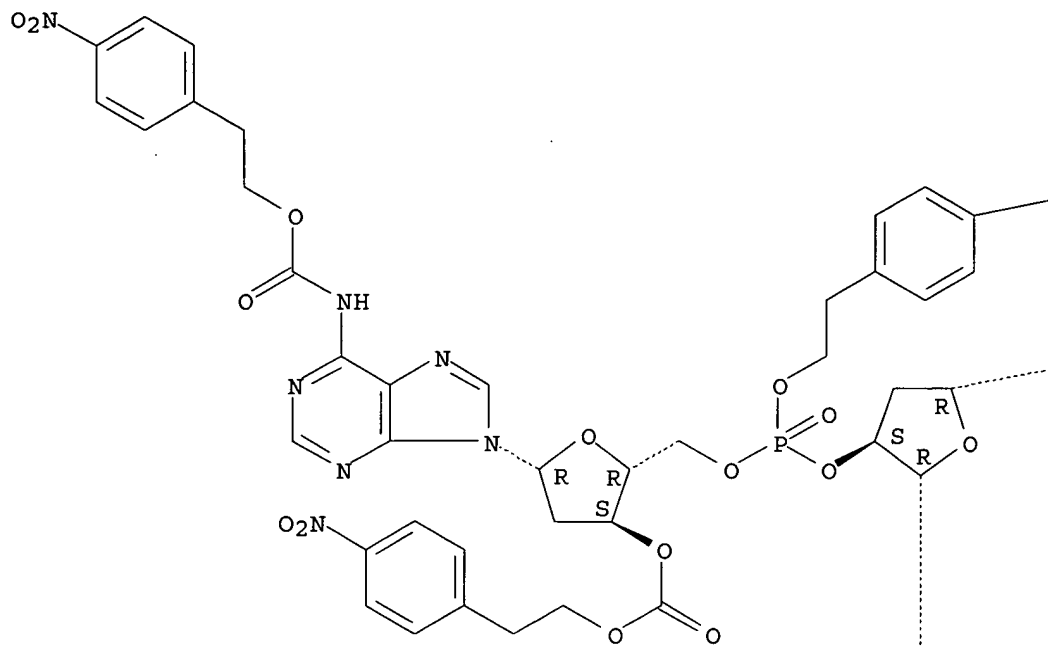
PAGE 2-B



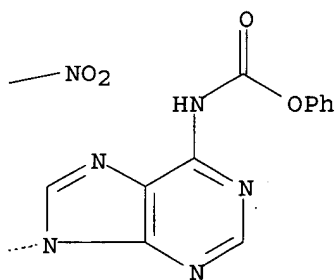
RN 195874-99-8 HCAPLUS
 CN Adenosine, N-benzoyl-2'-deoxy-5'-O-[[2-(4-nitrophenyl)ethoxy]carbonyl]-P-
 [2-(4-nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-
 nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI)
 (CA INDEX NAME)

Absolute stereochemistry.

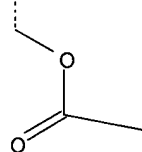
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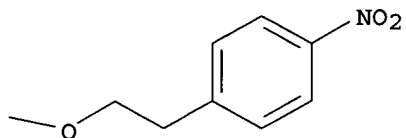
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IT 153120-95-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

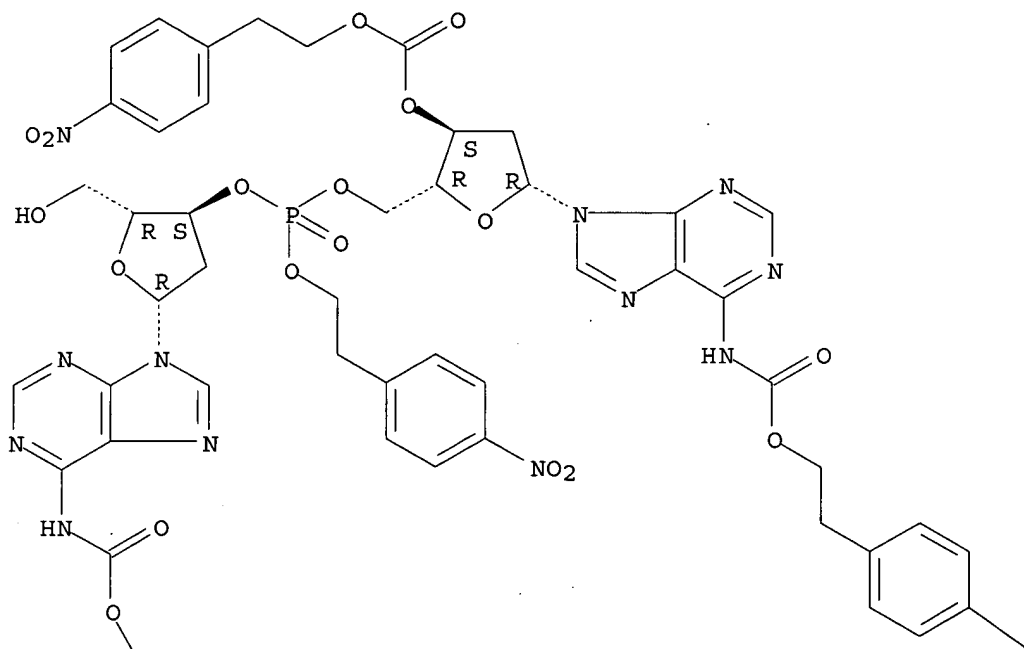
(preparation and reaction of, with phosphoramidochloridite; new type of fluorescein labeling of nucleosides and nucleotides)

RN 153120-95-7 HCAPLUS

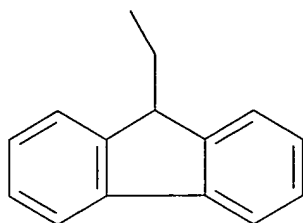
CN Adenosine, 2'-deoxy-N-[(9H-fluoren-9-ylmethoxy)carbonyl]-P-[2-(4-nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

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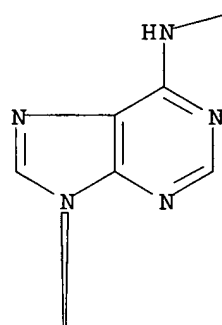
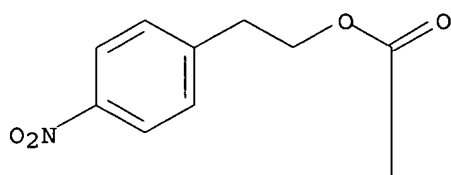
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NO₂

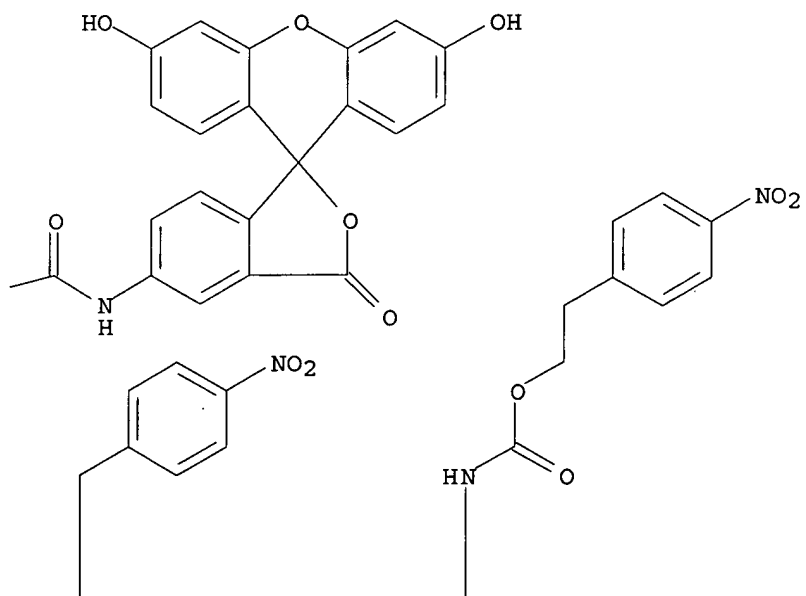
IT 153120-98-0P 195875-00-4P 663918-89-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation, total deprotection and sodium salt formation of; new type of
 fluorescein labeling of nucleosides and nucleotides)
 RN 153120-98-0 HCAPLUS
 CN Adenosine, 2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-5'-O-[[2-(4-
 nitrophenyl)ethoxy]carbonyl]-P-[2-(4-nitrophenyl)ethyl]adenylyl-
 (3'→5')-2'-deoxy-N-[[{(3',6'-dihydroxy-3-oxospiro[isobenzofuran-
 1(3H),9'-[9H]xanthen]-5-yl)amino]carbonyl]-P-[2-(4-
 nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-
 nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI)
 (CA INDEX NAME)

Absolute stereochemistry.

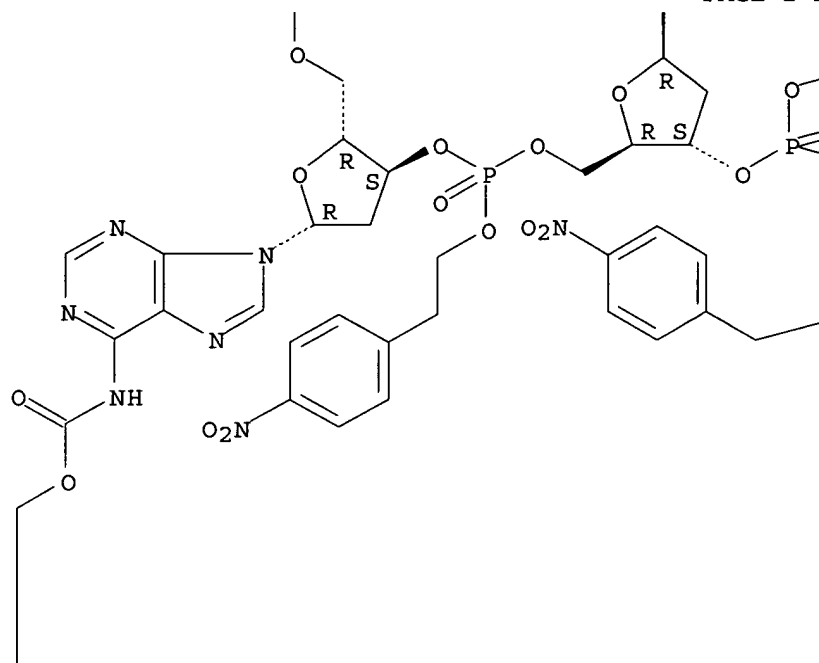
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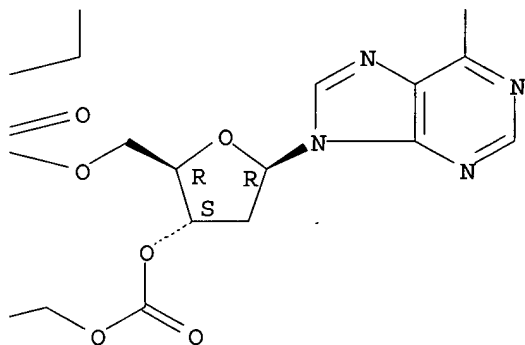
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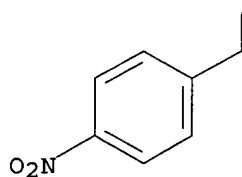
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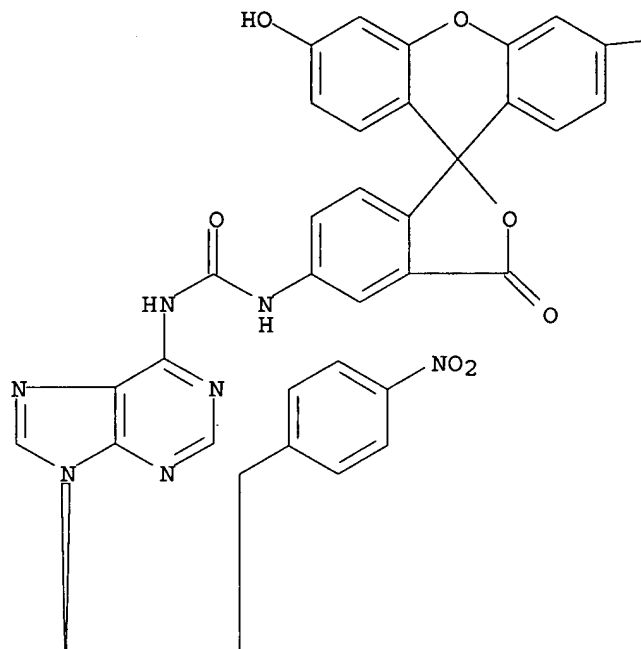


RN 195875-00-4 HCAPLUS
 CN Adenosine, 2'-deoxy-N-[[[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]carbonyl]-5'-O-[[2-(4-nitrophenyl)ethoxy]carbonyl]-P-[2-(4-nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-

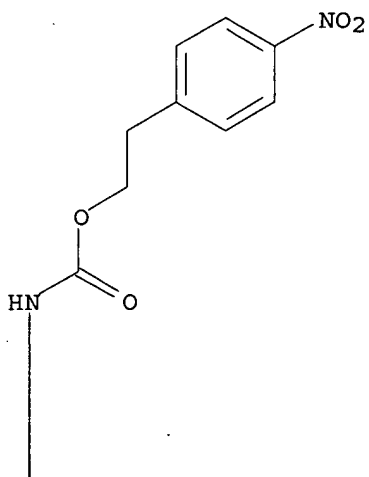
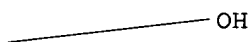
nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

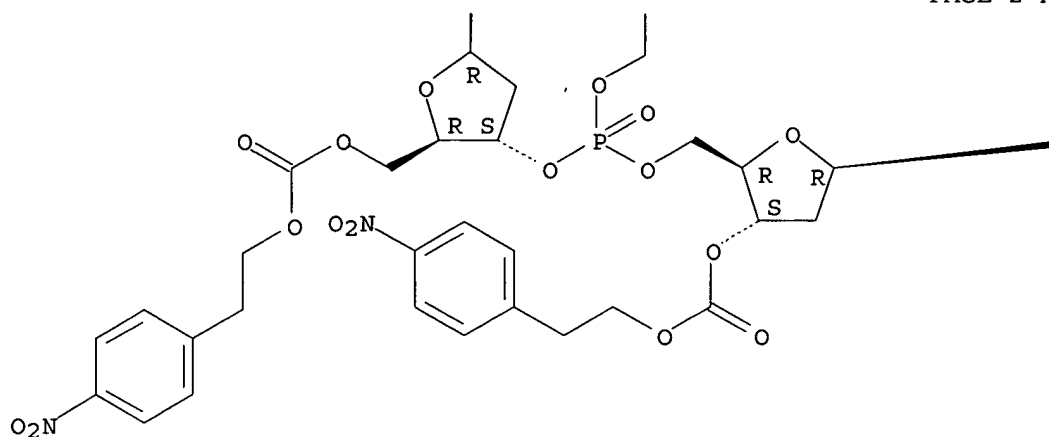
PAGE 1-A



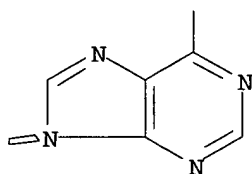
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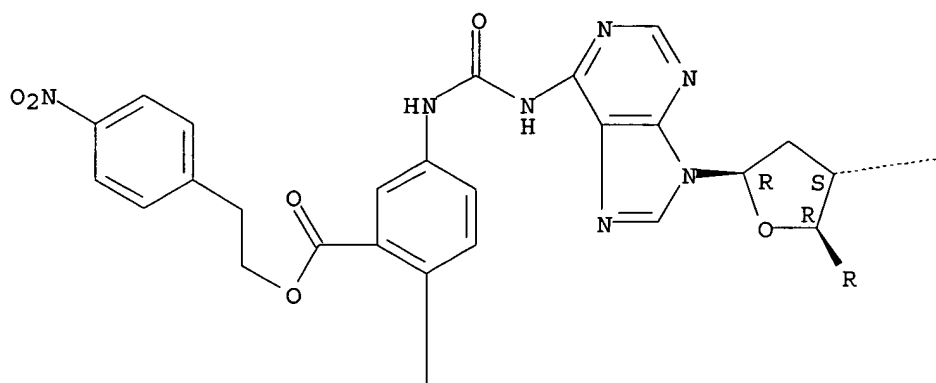


RN 663918-89-6 HCAPLUS

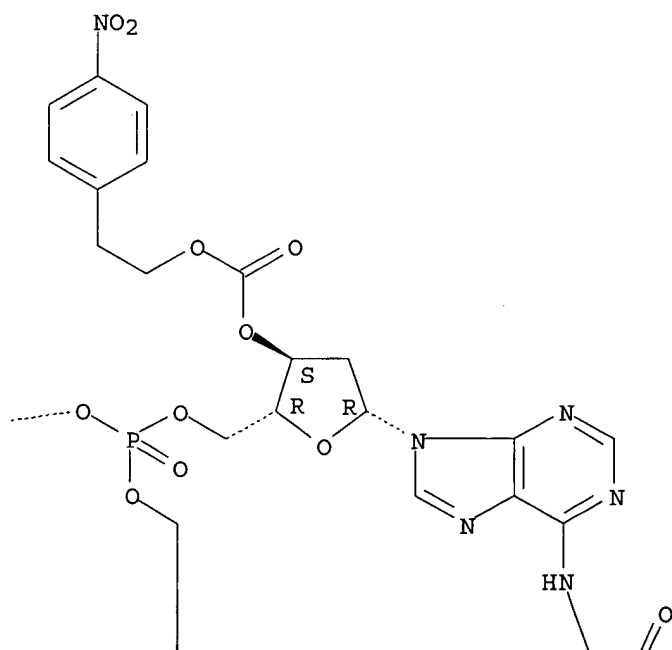
CN Adenosine, 2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-5'-O-[[2-(4-nitrophenyl)ethoxy]carbonyl]-P-[2-(4-nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[[3-[[2-(4-nitrophenyl)ethoxy]carbonyl]-4-[6-[2-(4-nitrophenyl)ethoxy]-3-oxo-3H-xanthen-9-yl]phenyl]amino]carbonyl]-P-[2-(4-nitrophenyl)ethyl]adenylyl-(3'→5')-2'-deoxy-N-[[2-(4-nitrophenyl)ethoxy]carbonyl]-, 3'-[2-(4-nitrophenyl)ethyl carbonate] (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

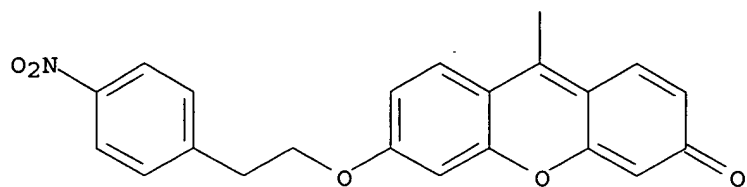
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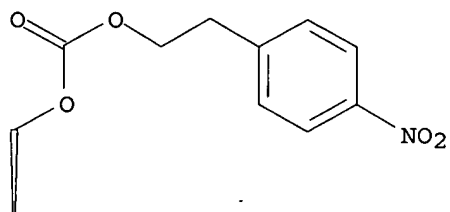
PAGE 1-B



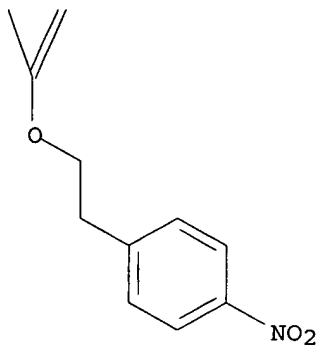
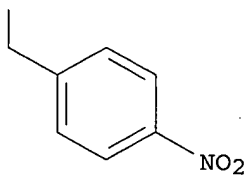
PAGE 2-A

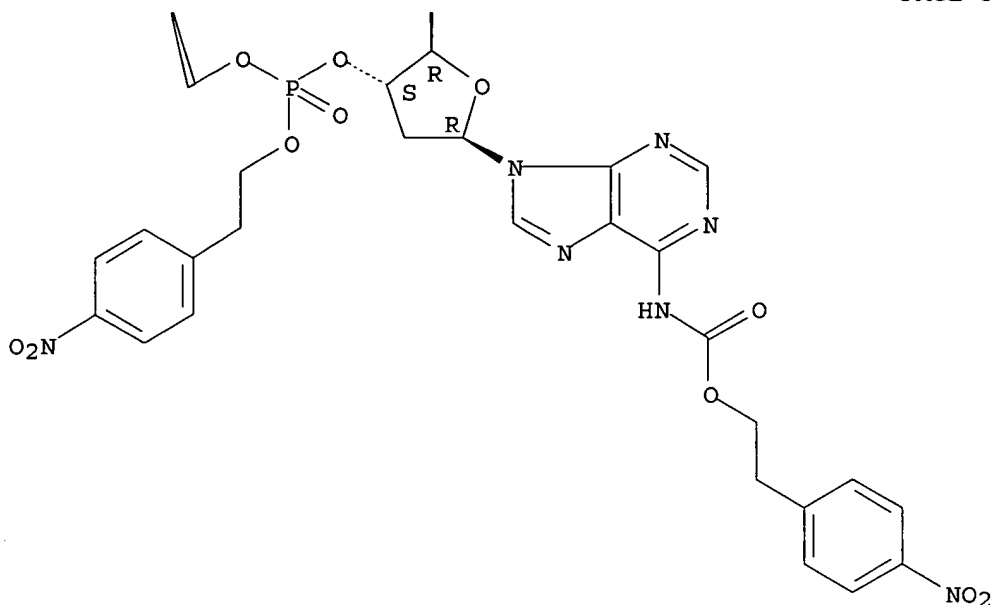


R



PAGE 2-B





REFERENCE COUNT: 111 THERE ARE 111 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L7 ANSWER 3 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:508332 HCAPLUS

DOCUMENT NUMBER: 131:286326

TITLE: Synthesis of paleatin B, an open-chain natural bis(bibenzyl) constituent of Marchantia paleacea var. diptera

AUTHOR(S): Varnai, Peter; Nogradi, Mihaly

CORPORATE SOURCE: Institute of Organic Chemistry, Technical University of Budapest, Budapest, H-1521, Hung.

SOURCE: ACH - Models in Chemistry (1999), 136(3), 275-286

CODEN: ACMCEI; ISSN: 1217-8969

PUBLISHER: Akademiai Kiado

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 131:286326

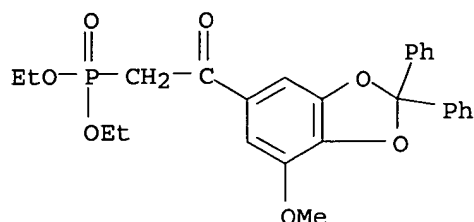
AB Paleatin B, an open chain bis(bibenzyl) constituent of Marchantia paleacea var. diptera methoxylated at one of the ethano bridges was synthesized. The key steps were the alkylation of a 2-aryl-1,3-dithiane (11) with a benzyl bromide (9) and transformation of a benzyl alc. (17) to a benzyl Me ether by acid catalyzed **methanolysis**.

IT 246257-39-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of paleatin B)

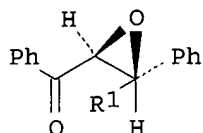
RN 246257-39-6 HCAPLUS

CN Phosphonic acid, [2-(7-methoxy-2,2-diphenyl-1,3-benzodioxol-5-yl)-2-oxoethyl]-, diethyl ester (9CI) (CA INDEX NAME)

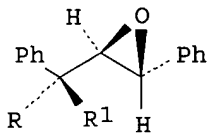


REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1998:476204 HCAPLUS
 DOCUMENT NUMBER: 129:203003
 TITLE: Chalcone epoxide derived hydroxyphosphonates -
 synthesis, stereochemistry and ring opening reactions
 AUTHOR(S): Wroblewski, A. E.; Karolczak, W.
 CORPORATE SOURCE: Institute of Chemistry, Faculty of Pharmacy, Medical
 University of Lodz, Muszynskiego, 90-151, Pol.
 SOURCE: Polish Journal of Chemistry (1998), 72(7), 1160-1167
 CODEN: PJCHDQ; ISSN: 0137-5083
 PUBLISHER: Polish Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 129:203003
 GI



I



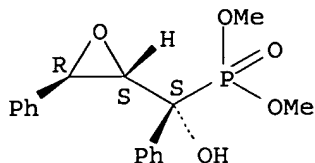
II

AB In the presence of KF-2H₂O di-Me phosphite adds preferentially (d.e. 50%) to the si face of the carbonyl group of chalcone epoxide I. Under acidic conditions the oxirane ring in the major α -hydroxy- β,γ -epoxyphosphonate (1S*,2S*,3R*)-II (R = OH, R1 = P(O)(OMe)₂) is regio- but not stereoselectively cleaved with methanol and/or water, while the minor one (1R*,2S*,3R*)-II (R = P(O)(OMe)₂, R1 = OH) undergoes intramol. cyclization to form 1,2-oxaphospholan-3,4-diols with full stereoselectivity.

IT 212131-14-1P 212131-25-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and acid catalyzed methanolysis of)

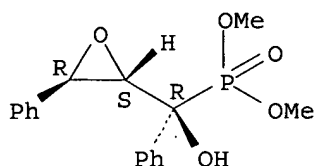
RN 212131-14-1 HCAPLUS
 CN Phosphonic acid, [(R)-hydroxyphenyl[(2R,3S)-3-phenyloxiranyl]methyl]-, dimethyl ester, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RN 212131-25-4 HCAPLUS
 CN Phosphonic acid, [(S)-hydroxyphenyl[(2R,3S)-3-phenyloxiranyl]methyl]-, dimethyl ester, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

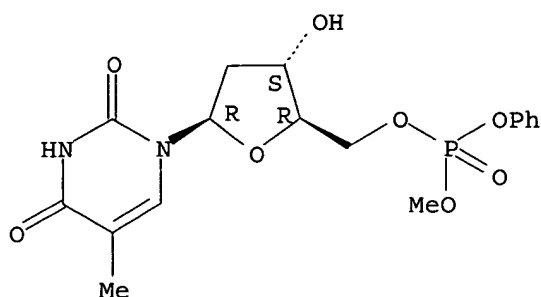
L7 ANSWER 5 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:88502 HCAPLUS
 DOCUMENT NUMBER: 126:104336
 TITLE: Hydrolysis of the cis-Phenyl Ester of Thymidine 3',5'-Cyclic Monophosphate: pH-Dependent Competition between Depyrimidination and Phosphotriester Hydrolysis via CO and PO Bond Ruptures
 AUTHOR(S): Varila, Jaana; Hankamaeki, Teemu; Oivanen, Mikko; Koole, Leo H.; Loennberg, Harri
 CORPORATE SOURCE: Department of Chemistry, University of Turku, Turku, FIN-20014, Neth.
 SOURCE: Journal of Organic Chemistry (1997), 62(4), 893-898
 CODEN: JOCEAH; ISSN: 0022-3263
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Hydrolytic reactions of the cis-Ph ester of thymidine 3',5'-cyclic monophosphate have been followed by HPLC over a wide pH range. The product analyses of the corresponding **methanolysis** reactions suggest that the pH-independent reaction predominantly takes place via cleavage of the C5'O bond, while the alkaline reaction proceeds by rupture of one of the PO bonds.

IT 184828-41-9P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (kinetics of hydrolysis and pH-dependent bond cleavage of the cis-Ph ester of thymidine cyclic monophosphate)

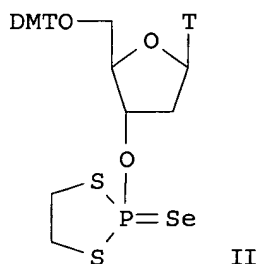
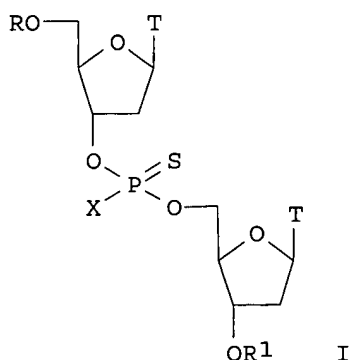
RN 184828-41-9 HCAPLUS
 CN 5'-Thymidylic acid, methyl phenyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 6 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1996:600882 HCAPLUS
 DOCUMENT NUMBER: 125:329235
 TITLE: Synthesis and reactivity of dithymidylyl-3',5''-phosphorothiofluoridates
 AUTHOR(S): Misiura, Konrad; Szymanowicz, Daria; Stec, Wojciech J.
 CORPORATE SOURCE: Centre Molecular Macromolecular Studies, Polish Academy Sciences, Lodz, 90-362, Pol.
 SOURCE: Collection of Czechoslovak Chemical Communications (1996), 61(Spec. Issue), S101-S106
 CODEN: CCCCAK; ISSN: 0010-0765
 PUBLISHER: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB Based upon dithiaphospholane method the new approach to the synthesis of dithymidine-3',5''-phosphorothioselenoate (mixture of two P-diastereomers) was established. Methylation of these compds. occurred exclusively at selenium atom and obtained methylselenyl esters under treatment with fluoride ion gave dithymidine-3',5''-phosphorothiofluoridates as the mixts. of both P-stereoisomers. Their base-catalyzed hydrolysis and **methanolysis** led to dithymidine-3',5''-phosphorothioates and dithymidine-3',5''-(O-methyl)phosphorothioates, resp. In this communication authors present their results supporting the extended scope

of oxathia-and dithiaphospholane chemical in its application to the synthesis of dithymidine-3',5'-phosphorothioate (I; X = F, R = DMT, R1 = Ac). Thus, thymidine 3'-O-(2-seleno-1,3,2-dithiaphospholane) derivative (II) in the DBU-assisted reaction with 3'-O-acetylthymidine gave dithymidine-3',5''-phosphorothioselenothioate derivative I (X = Se-1, R = DMT, R1 = Ac) which underwent chemoselective alkylation by MeI at selenium to give Se-Me dithymidine-3',5''-phosphorothioselenothioate derivative I (X = MeSe, R = DMT, R1 = Ac). Treatment of the latter compound with AgF in aqueous MeCN or triethylammonium fluoride [Et3N(HF)3] in THF produced dithymidine-3',5''-phosphorothiofluoridate derivative I (X = F, R = DMT, R1 = Ac), which underwent complete hydrolysis in 1 M NH4OH within 15 min to give a diastereomeric mixture of dithymidine-3',5''-phosphorothioate derivative I (X = O-1, R = DMT, R1 = Ac). The same compound I (X = F, R = DMT, R1 = Ac) reacted smoothly with MeOH in the presence of Et3N or pyridine to give O-Me dithymidine-3',5''-phosphorothioate derivative I (X = MeO, R = DMT, R1 = Ac). The susceptibility of I (X = F, R = DMT, R1 = Ac) to hydrolysis in aqueous media, and especially, fast hydrolysis in concentrated ammoniacal solution, limits the oligonucleotides containing internucleotide functions modified with phosphorothiofluoridate moieties from the general use as antisense agents. With regard to author's interest in enzymic studies, authors also prepared the so far uncharacterized, fully deprotected dithymidine-3',5''-phosphorothiofluoridate I (X = F, R = R1 = H) (III). Enzymic studies on substrate specificity and/or inhibitory effect of III for the snake venom phosphodiesterase and nuclease P1 are in progress.

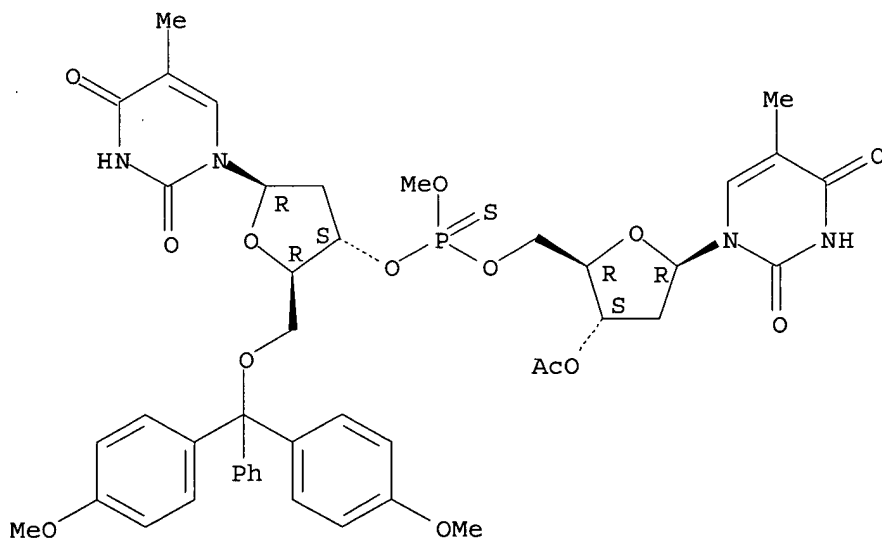
IT 151852-35-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis and reactivity of dithymidylyl-3',5''-phosphorothiofluoridates)

RN 151852-35-6 HCAPLUS

CN Thymidine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-P(O)-methyl-P-thiothymidylyl-(3'→5')-, 3'-acetate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 183295-20-7P 183295-22-9P 183507-10-0P
183507-12-2P

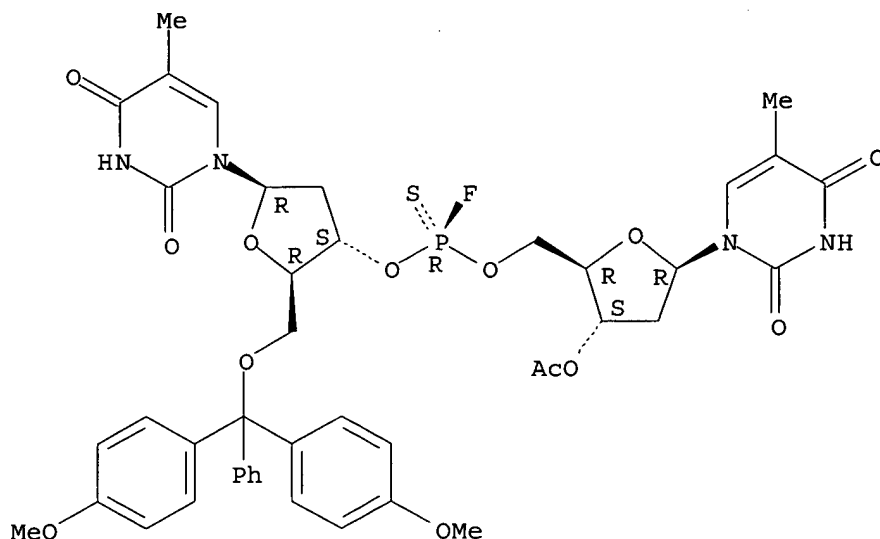
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(synthesis and reactivity of dithymidylyl-3',5''-phosphorothiofluoridates)

RN 183295-20-7 HCAPLUS

CN Thymidine, (R)-5'-O-[bis(4-methoxyphenyl)phenylmethyl]-P-deoxy-P-fluoro-P-thiothymidylyl-(3'→5')-, 3'-acetate (9CI) (CA INDEX NAME)

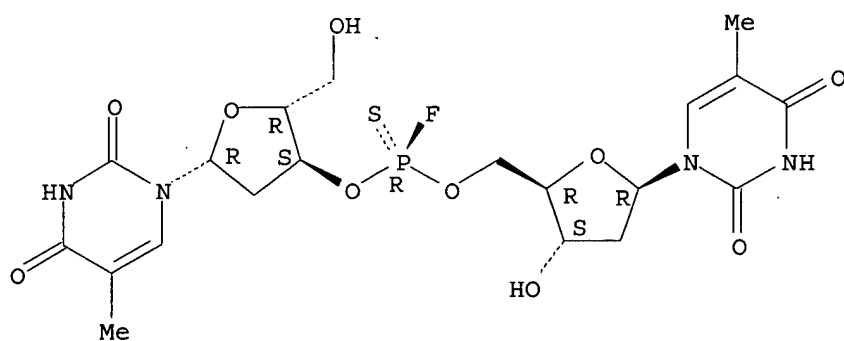
Absolute stereochemistry.



RN 183295-22-9 HCAPLUS

CN Thymidine, (R)-P-deoxy-P-fluoro-P-thiothymidylyl-(3'→5')- (9CI)
(CA INDEX NAME)

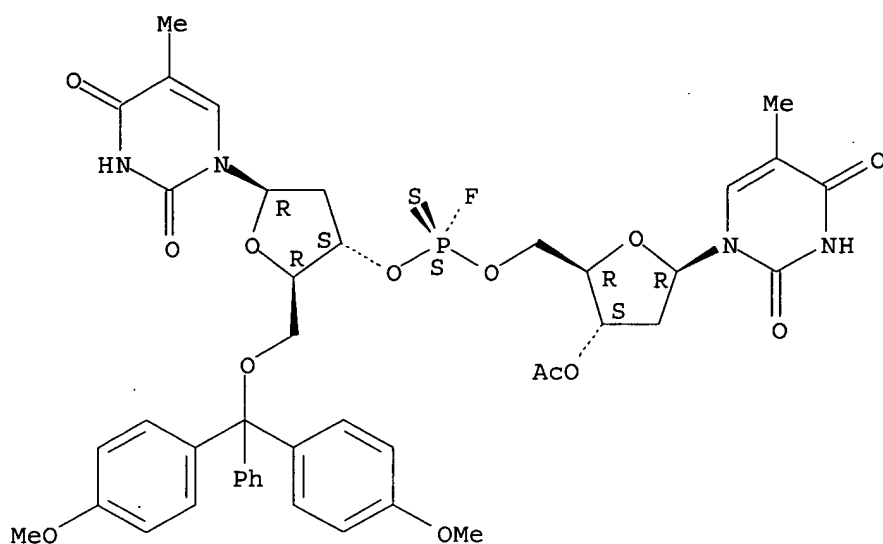
Absolute stereochemistry.



RN 183507-10-0 HCAPLUS

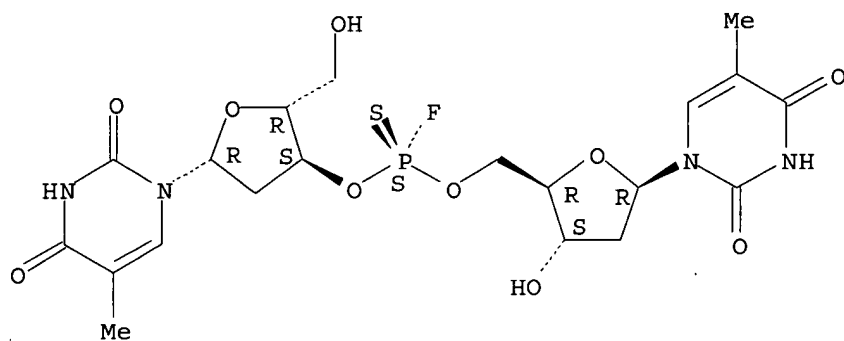
CN Thymidine, (S)-5'-O-[bis(4-methoxyphenyl)phenylmethyl]-P-deoxy-P-fluoro-P-thiothymidylyl-(3'→5')-, 3'-acetate (9CI) (CA INDEX NAME)

Absolute stereochemistry.

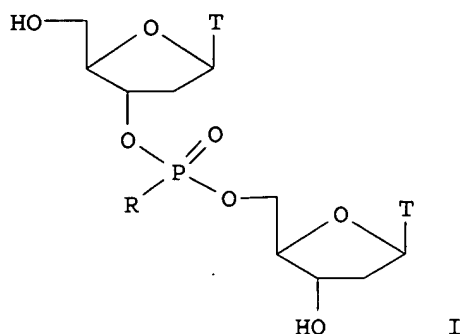


RN 183507-12-2 HCAPLUS
 CN Thymidine, (S)-P-deoxy-P-fluoro-P-thiothymidylyl-(3'→5')- (9CI)
 (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 7 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1995:488642 HCAPLUS
 DOCUMENT NUMBER: 123:83920
 TITLE: Dithymidylyl-3',5'-phosphorofluoridates: new synthesis
 and stability under solvolytic conditions
 AUTHOR(S): Misiura, Konrad; Pietrasiak, Daria; Stec, Wojciech J.
 CORPORATE SOURCE: Cent. Mol. Macromol. Stud., Pol. Acad. Sci., Lodz,
 90-363, Pol.
 SOURCE: Journal of the Chemical Society, Chemical
 Communications (1995), (6), 613-14
 CODEN: JCCCAT; ISSN: 0022-4936
 PUBLISHER: Royal Society of Chemistry
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 123:83920
 GI



AB Dithymidylyl-3',5'-phosphorofluoridates, e.g. I (R = F), prepared by fluorination nucleophilic substitution phosphoroselenoate nucleotides, e.g. I (R = SeMe) are relatively unstable under solvolytic conditions and undergo rapid base-catalyzed hydrolysis/methanolysis.

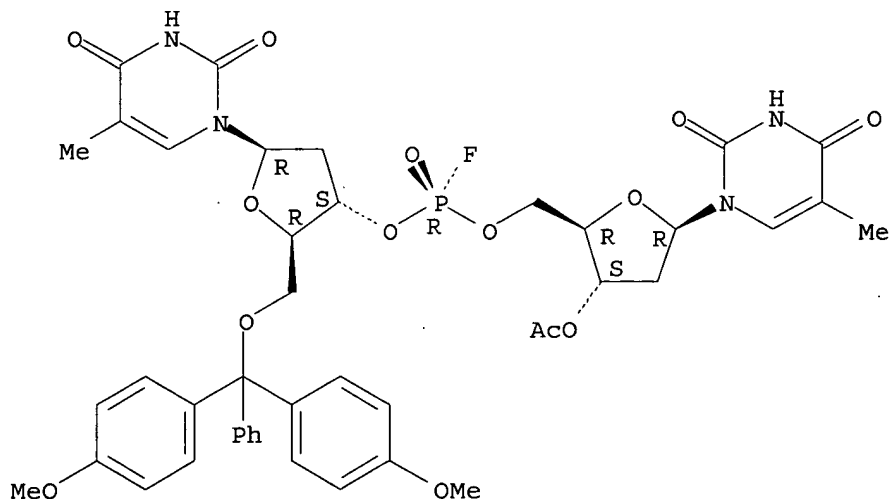
IT 164927-31-5P 164927-34-8P 165037-21-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(dithymidylylphosphorofluoridates new synthesis and stability under solvolytic conditions)

RN 164927-31-5 HCAPLUS

CN Thymidine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-P-deoxy-P-fluorothymidylyl-(3'→5')-, 3'-acetate, (R)- (9CI) (CA INDEX NAME)

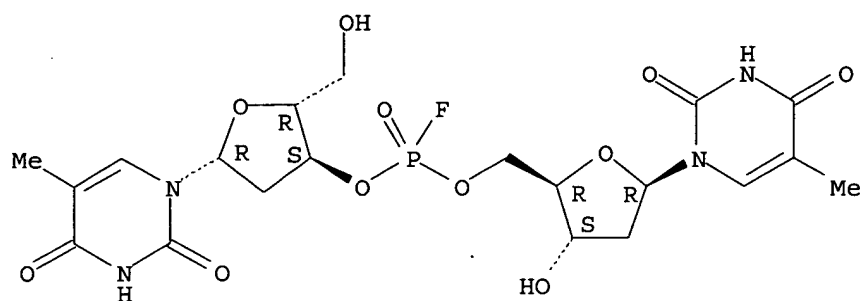
Absolute stereochemistry.



RN 164927-34-8 HCAPLUS

CN Thymidine, P-deoxy-P-fluorothymidylyl-(3'→5')- (9CI) (CA INDEX NAME)

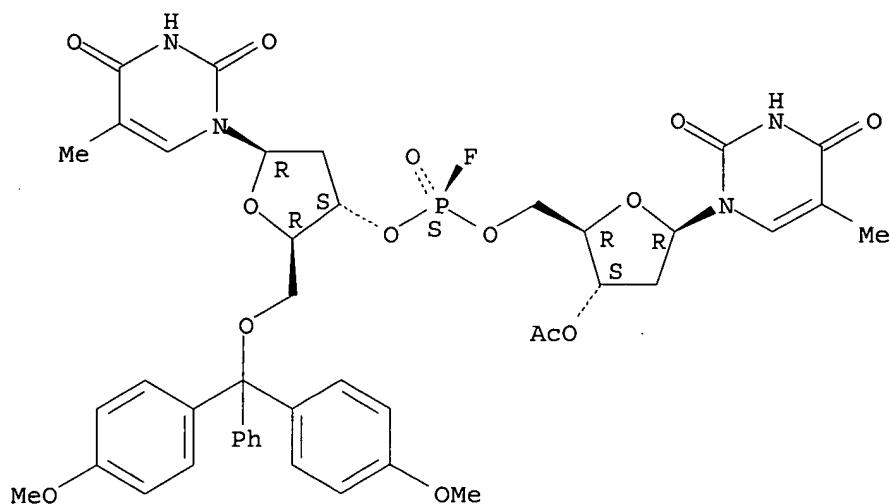
Absolute stereochemistry.



RN 165037-21-8 HCAPLUS

CN Thymidine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-P-deoxy-P-fluorothymidylyl-(3'→5')-, 3'-acetate, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 35002-94-9P 130451-30-8P 130549-27-8P

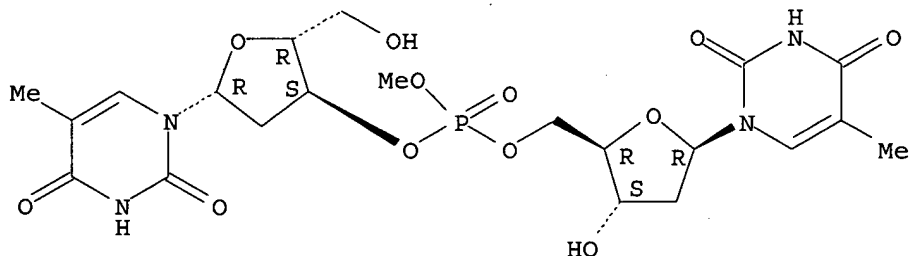
164927-32-6P 165037-22-9P

RL: SPN (Synthetic preparation); PREP (Preparation)
(dithymidylylphosphorofluoridates new synthesis and stability under solvolytic conditions)

RN 35002-94-9 HCAPLUS

CN Thymidine, P-methylthymidylyl-(3'→5')- (9CI) (CA INDEX NAME)

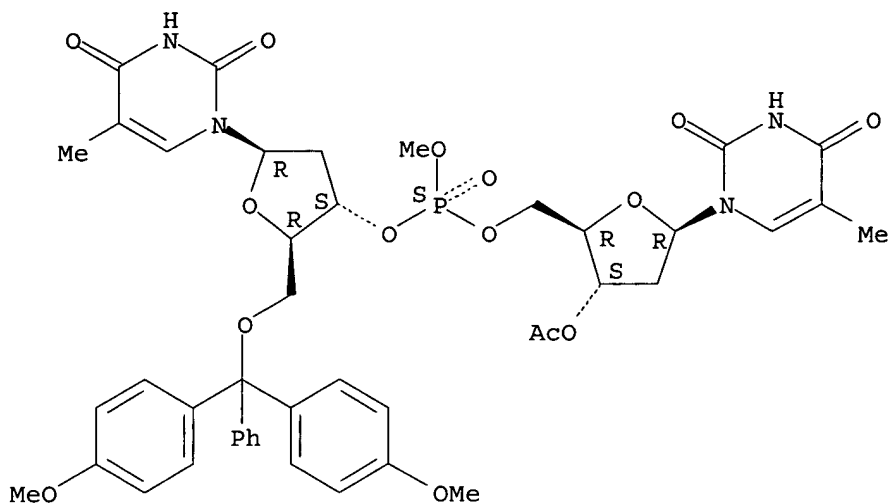
Absolute stereochemistry.



RN 130451-30-8 HCAPLUS

CN Thymidine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-P-methylthymidylyl-(3'→5')-, 3'-acetate, (S)- (9CI) (CA INDEX NAME)

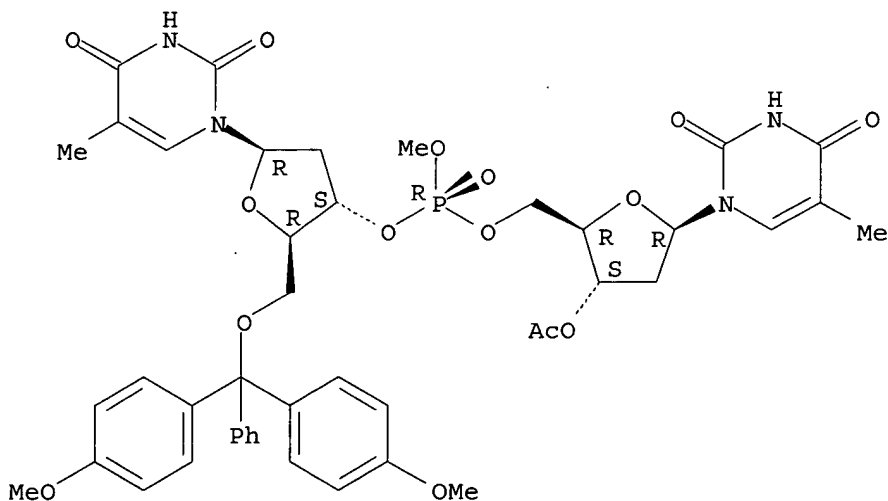
Absolute stereochemistry.



RN 130549-27-8 HCAPLUS

CN Thymidine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-P-methylthymidylyl-(3'→5')-, 3'-acetate, (R)- (9CI) (CA INDEX NAME)

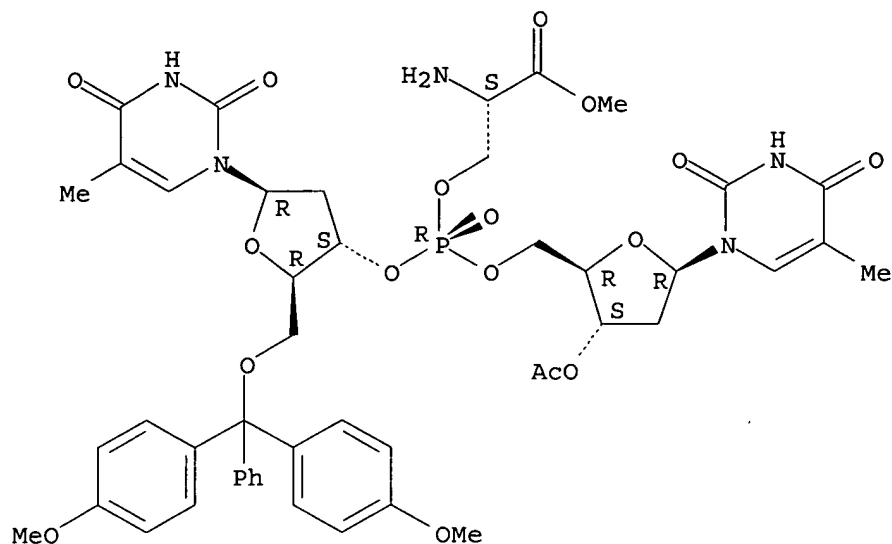
Absolute stereochemistry.



RN 164927-32-6 HCAPLUS

CN L-Serine, methyl ester, ester with 5'-O-[bis(4-methoxyphenyl)phenylmethyl]thymidylyl-(3'→5')-thymidine 3'-acetate, (R)- (9CI) (CA INDEX NAME)

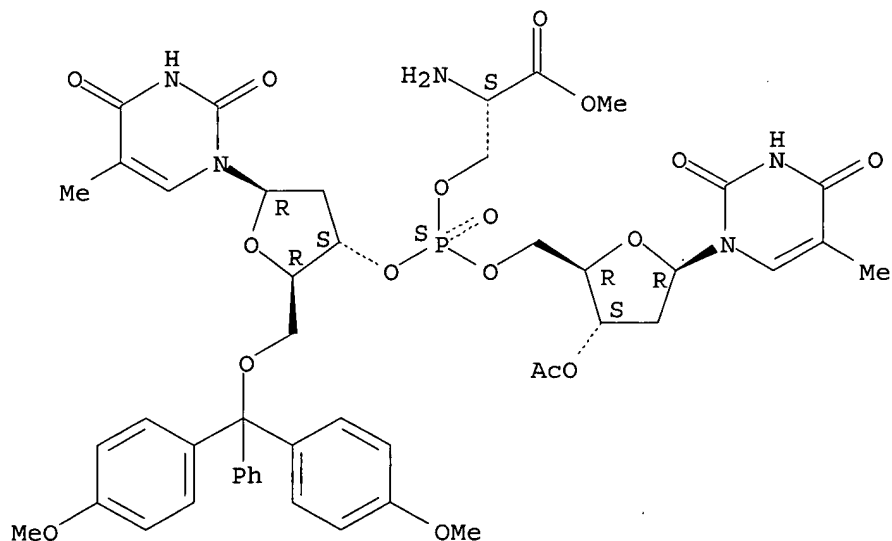
Absolute stereochemistry.



RN 165037-22-9 HCAPLUS

CN L-Serine, methyl ester, ester with 5'-O-[bis(4-methoxyphenyl)phenylmethyl]thymidylyl-(3'→5')-thymidine 3'-acetate, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 8 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:495190 HCAPLUS

DOCUMENT NUMBER: 119:95190

TITLE: Stereoselective construction of the C(21)-C(42) fragment of rapamycin

AUTHOR(S): Nicolaou, K. C.; Bertinato, P.; Piscopio, A. D.; Chakraborty, T. K.; Minowa, N.

CORPORATE SOURCE: Dep. Chem., Univ. California, San Diego, La Jolla, CA, 92093, USA

SOURCE: Journal of the Chemical Society, Chemical

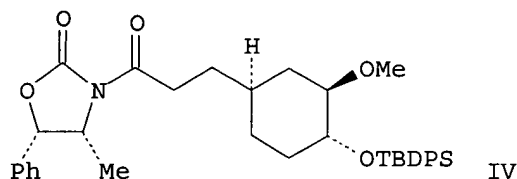
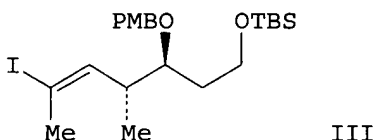
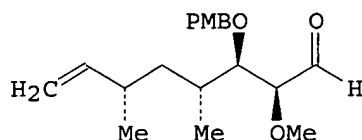
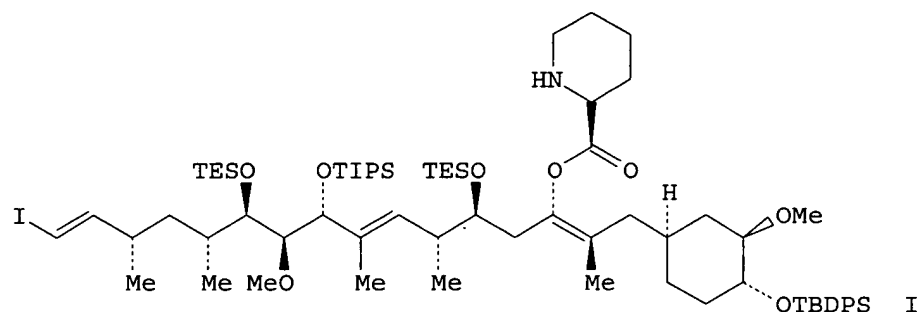
DOCUMENT TYPE:

Journal

LANGUAGE:

English

GI



AB A stereoselective construction of the C(21)-C(42) fragment I [TES = Et₃Si, TIPS = (Me₂CH)₃Si, TBDPS = Me₃CSiPh₂] of rapamycin via coupling and elaboration of the C(21)-C(28), C(29)-C(34), C(35)-C(42) fragments II-IV (PMB = 4-MeOC₆H₄, TBS = Me₃CSiMe₂, TBDPS = Me₃CSiPh₂) is described.

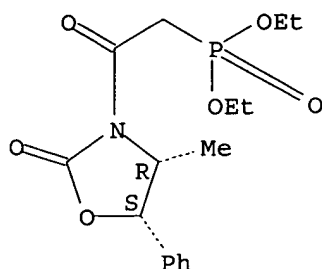
IT 147725-15-3

RL: RCT (Reactant); RACT (Reactant or reagent)
(Wittig reaction of, with methoxy(silyloxy)cyclohexanecarboxaldehyde)

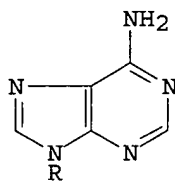
RN 147725-15-3 HCAPLUS

CN Phosphonic acid, [2-[(4R,5S)-4-methyl-2-oxo-5-phenyl-3-oxazolidinyl]-2-oxoethyl]-, diethyl ester (9CI) (CA INDEX NAME)

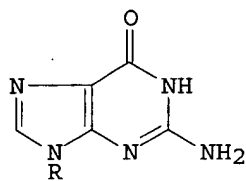
Absolute stereochemistry. Rotation (+).



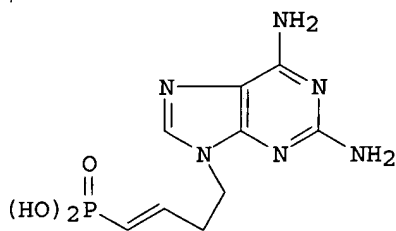
L7 ANSWER 9 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1993:473006 HCAPLUS
 DOCUMENT NUMBER: 119:73006
 TITLE: Novel acyclonucleotides: synthesis and antiviral activity of alkenylphosphonic acid derivatives of purines and a pyrimidine
 AUTHOR(S): Harnden, Michael R.; Parkin, Ann; Parratt, Martin J.; Perkins, Robert M.
 CORPORATE SOURCE: SmithKline Beecham Pharm., Epsom/Surrey, KT18 5XQ, UK
 SOURCE: Journal of Medicinal Chemistry (1993), 36(10), 1343-55
 CODEN: JMCMAR; ISSN: 0022-2623
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 119:73006
 GI



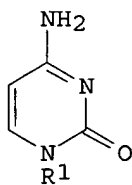
I



II



III



IV

AB A series of phosphonoalkenyl and (phosphonoalkenyl)oxy derivs. of purines and pyrimidines were synthesized. These compds. are the first reported acyclonucleotides which incorporate the α,β -unsatd. phosphonic acid moiety as the phosphate mimic and include compds. in which the acyclic substituent is attached to N(9) of a purine or N(1) of a pyrimidine by either a nitrogen-carbon or a nitrogen-oxygen bond. The phosphonoalkenyl-substituted compds. I [R = CH₂CH₂CH:CHP(O)(OH)₂-(E), -(Z), CH₂CH(CH₂OH)CH:CHP(O)(OH)₂], II [R = CH₂CH₂CH:CHP(O)(OH)₂-(E), -(Z), CH₂CH(CH₂OH)CH:CHP(O)(OH)₂], CH₂C(:CH₂)CH:CHP(O)(OH)₂-(E)], III and IV [R₁ = CH₂CH(CH₂OH)CH:CHP(O)(ONa)₂-(E)] were prepared either by Mitsunobu

coupling of alcs. with purine or pyrimidine derivs. or by alternative alkylations of the heterocyclic bases. The (phosphonoalkenyl)oxy derivs. I [R = OCH₂CH₂CH:CHP(O)(OH)₂-(E), -(Z), OCH₂CH(CH₂OH)CH:CHP(O)(OH)₂-(E), OCH(CH₂OH)CH:CHP(O)(OH)₂-(E)], II [R = OCH₂CH₂CH:CHP(O)(OH)₂-(E), -(Z), OCH₂CH(CH₂OH)CH:CHP(O)(OH)₂-(E), OCH(CH₂OH)CH:CHP(O)(OH)₂-(E)], and IV [R₁ = OCH(CH₂OH)CH:CHP(O)(OH)₂-(E)] were synthesized by coupling of alcs. with 9-hydroxypurines or a 1-hydroxypyrimidine under Mitsunobu conditions. The novel acyclonucleotides were tested for activity against herpes simplex types 1 and 2 (HSV-1 and HSV-2), varicella zoster virus (VZV), cytomegalovirus (CMV), visna virus, and human immunodeficiency virus type 1 (HIV-1). Guanine derivs. were moderately to extremely cytotoxic, but the adenines were less toxic to cells. At the concns. tested, (Z)-isomers in the unbranched series had no activity against herpes viruses and HIV-1. (E)-9-[(4-Phosphonobut-3-enyl)oxy]adenine [I; R = OCH₂CH₂CH:CHP(O)(OH)₂-(E)] displayed selective activity against HIV-1, (E)-2,6-diamino-9-(4-phosphonobut-3-enyl)purine (III) showed selective antiretrovirus activity, and (E)-9-[2-(hydroxymethyl)-4-phosphonobut-3-enyl]adenine [I; R = CH₂CH(CH₂OH)CH:CHP(O)(OH)₂-(E)] showed selective antiherpes virus (VZV and CMV) activity.

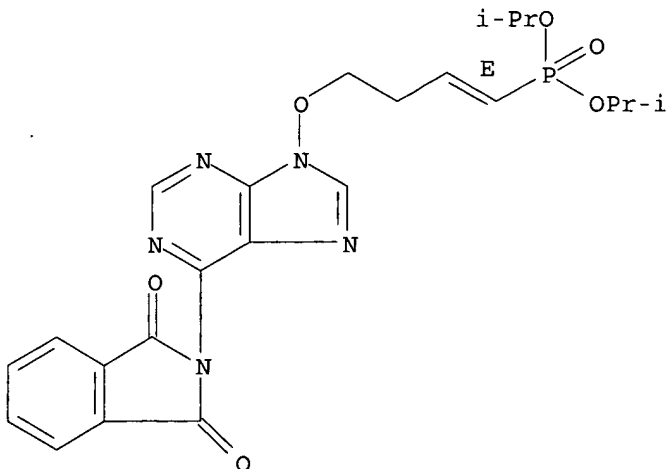
IT 140896-61-3P 140896-65-7P 140896-68-0P
148120-81-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrogenolysis of)

RN 140896-61-3 HCAPLUS

CN Phosphonic acid, [4-[[6-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)-9H-purin-9-yl]oxy]-1-butenyl]-, bis(1-methylethyl) ester, (E)- (9CI) (CA INDEX NAME)

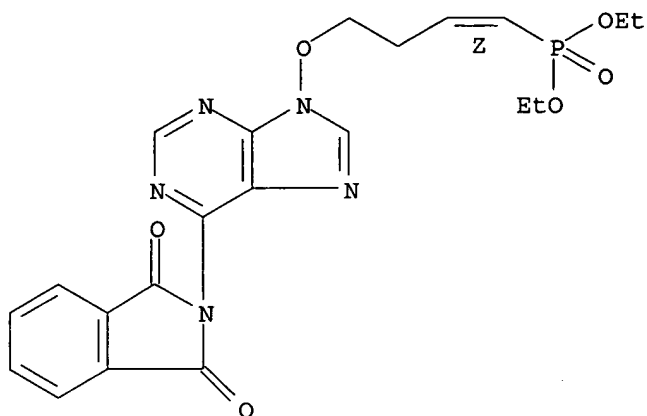
Double bond geometry as shown.



RN 140896-65-7 HCAPLUS

CN Phosphonic acid, [4-[[6-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)-9H-purin-9-yl]oxy]-1-butenyl]-, diethyl ester, (Z)- (9CI) (CA INDEX NAME)

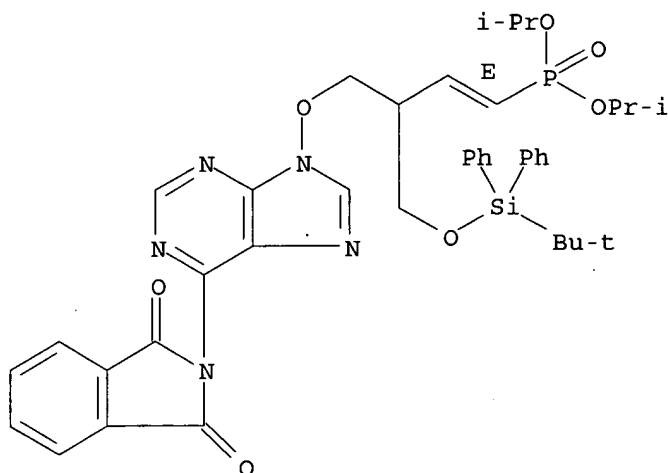
Double bond geometry as shown.



RN 140896-68-0 HCAPLUS

CN Phosphonic acid, [4-[[6-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)-9H-purin-9-yl]oxy]-3-[[[(1,1-dimethylethyl)diphenylsilyl]oxy]methyl]-1-butenyl]-, bis(1-methylethyl) ester, (E)- (9CI) (CA INDEX NAME)

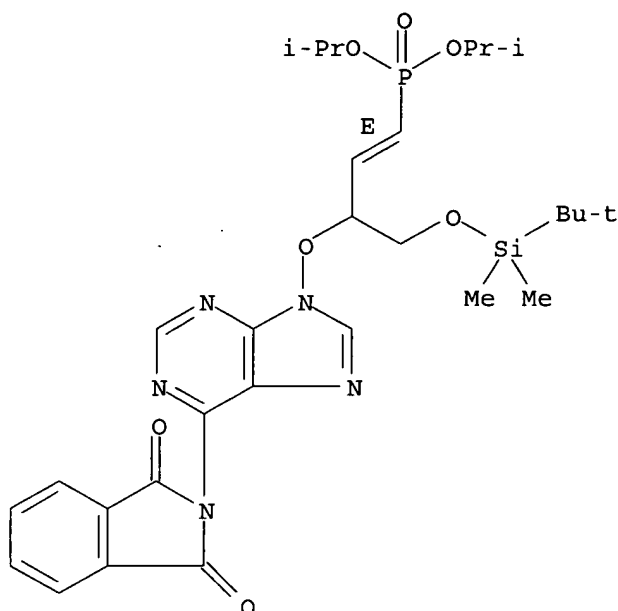
Double bond geometry as shown.



RN 148120-81-4 HCAPLUS

CN Phosphonic acid, [3-[[6-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)-9H-purin-9-yl]oxy]-4-[[[(1,1-dimethylethyl)dimethylsilyl]oxy]-1-butenyl]-, bis(1-methylethyl) ester, (E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L7 ANSWER 10 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:102373 HCAPLUS

DOCUMENT NUMBER: 118:102373

TITLE: The potential of carbocyclic nucleosides for the treatment of AIDS: synthesis of some diphosphorylphosphonates possessing potent activity against HIV-coded reverse transcriptase

AUTHOR(S): Coe, Diane M.; Roberts, Stanley M.; Storer, Richard

CORPORATE SOURCE: Dep. Chem., Exeter Univ., Exeter/Devon, EX4 4QD, UK

SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1992), (20), 2695-704

CODEN: JCPRB4; ISSN: 0300-922X

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 118:102373

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The phosphonates I - IV and the diphosphorylphosphonates V and VI have been prepared as mimics of nucleoside phosphates and triphosphates resp. The compds. V and VI were found to be potent inhibitors of human immunodeficiency virus reverse transcriptase (HIV-rt).

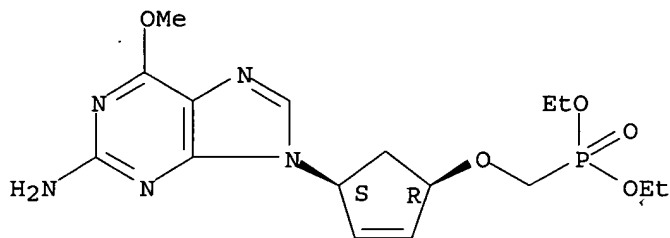
IT 135423-35-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and O-demethylation of)

RN 135423-35-7 HCAPLUS

CN Phosphonic acid, [[[4-(2-amino-6-methoxy-9H-purin-9-yl)-2-cyclopenten-1-yl]oxy]methyl]-, diethyl ester, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



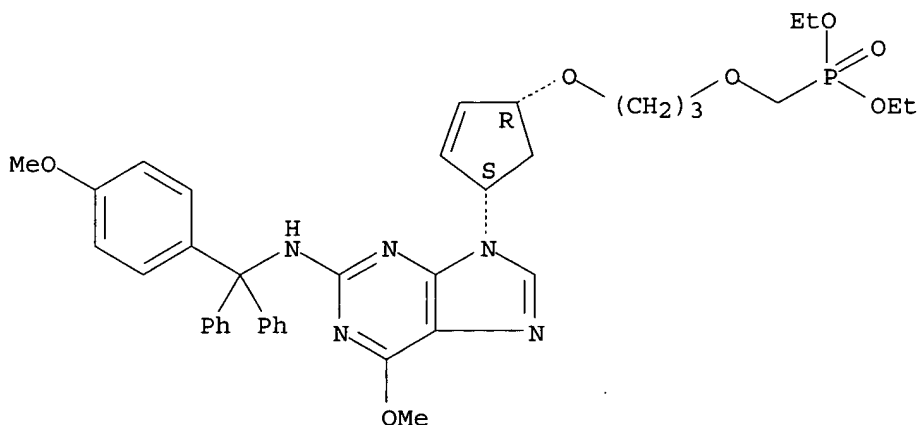
IT 145622-62-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 145622-62-4 HCAPLUS

CN Phosphonic acid, [[3-[[4-[6-methoxy-2-[[[4-methoxyphenyl]diphenylmethyl]amino]-9H-purin-9-yl]-2-cyclopenten-1-yl]oxy]propoxy]methyl]-, diethyl ester, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L7 ANSWER 11 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:81306 HCAPLUS

DOCUMENT NUMBER: 118:81306

TITLE: Synthesis of C-glycosyltetrazoles related to 3-deoxy-D-arabino-heptulosonic acid 7-phosphate (DAHP); potential inhibitors of early steps in the shikimate pathway

AUTHOR(S): Buchanan, J. Grant; Clelland, Andrew P. W.; Johnson, Trevor; Rennie, Robert A. C.; Wightman, Richard H.
CORPORATE SOURCE: Dep. Chem., Heriot-Watt Univ., Riccarton/Edinburgh, EH14 4AS, UK

SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1992), (20), 2593-601
CODEN: JCPRB4; ISSN: 0300-922X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Treatment of 3,4,5,7-tetra-O-acetyl-2,6-anhydro-D-glycero-D-galacto-

heptononitrile with diazabicycloundecene (BDU) formed 4,5,7-tri-O-acetyl-2,6-anhydro-3-deoxy-D-arabino-hept-2-enonitrile, which on treatment with NH_4N_3 gave the tetrazole. Stereoselective catalytic reduction of the tetrazole and deacetylation produced 5-(2-deoxy- β -D-arabino-hexopyranosyl)tetrazole, which was converted in two steps into its 6-phosphate. Reaction of 4,5,7-tri-O-acetyl-2,6-anhydro-3-deoxy-D-manno-heptononitrile with NH_4N_3 , followed by deacetylation, gave 5-(2-deoxy- α -D-arabino-hexopyranosyl)tetrazole (81% overall), which was converted into its 6-phosphate. When 4,5,7-tri-O-acetyl-2,6-anhydro-2-bromo-3-deoxy-D-gluco-heptononitrile was treated with MeOH and 2,6-lutidine, Me 3,4,6-tri-O-acetyl-1-cyano-2-deoxy- β -D-arabino-hexopyranoside (I) was obtained (40%) together with the α -anomer (11%). Cycloaddn. of I with azide, followed by sequential treatment with base and with acid, gave 2-deoxy-1-tetrazol-5-yl- α -D-arabino-hexopyranose (54% overall). Treatment of 1,3,4,6-tetra-O-acetyl-2-deoxy- α -D-lyxo-hexopyranose with Me_3SiCN and BF_3 in MeNO_2 gave 4,5,7-tri-O-acetyl-2,6-anhydro-3-deoxy-D-talo-heptononitrile (II, 53%), together with the D-galacto-epimer (17%). Cycloaddn. of these compds. with azide and deprotection gave 5-(2-deoxy- β -D-lyxo-hexopyranosyl)tetrazole and the α -D-lyxo-isomer resp. in good yields. Reaction of II with N-bromosuccinimide formed 4,5,7-tri-O-acetyl-2,6-anhydro-2-bromo-3-deoxy-D-galacto-heptononitrile (63%), which with MeOH and 2,6-lutidine was converted into the Me β -D-glycoside. Cycloaddn. of the glycoside with azide, deacetylation, and hydrolysis led to 2-deoxy-1-tetrazol-5-yl- α -D-lyxo-hexopyranose. None of the C-glycosyltetrazoles were strong inhibitors of dehydroquinase synthase from *E. coli*.

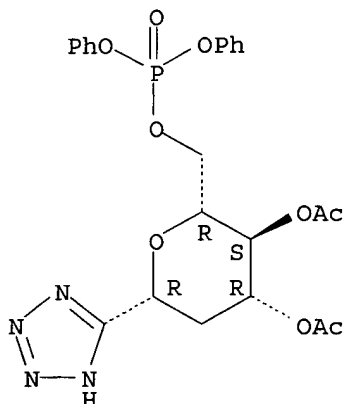
IT 145575-50-4P 145575-54-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and deacetylation of)

RN 145575-50-4 HCAPLUS

CN D-arabino-Hexitol, 1,5-anhydro-2-deoxy-1-C-1H-tetrazol-5-yl-,
3,4-diacetate 6-(diphenyl phosphate), (1R) - (9CI) (CA INDEX NAME)

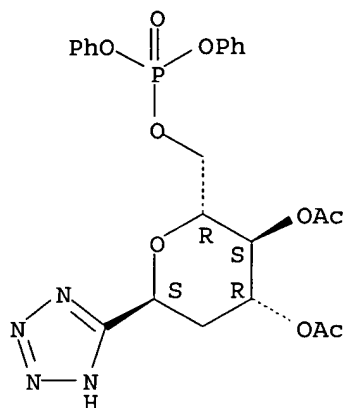
Absolute stereochemistry.



RN 145575-54-8 HCAPLUS

CN D-arabino-Hexitol, 1,5-anhydro-2-deoxy-1-C-1H-tetrazol-5-yl-,
3,4-diacetate 6-(diphenyl phosphate), (1S) - (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 12 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:22325 HCAPLUS

DOCUMENT NUMBER: 118:22325

TITLE: Synthetic, mechanistic and photochemical studies of phosphate esters of substituted benzoin

AUTHOR(S): Corrie, John E. T.; Trentham, David R.

CORPORATE SOURCE: Natl. Inst. Med. Res., London, NW7 1AA, UK

SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1992), (18), 2409-17

CODEN: JCPRB4; ISSN: 0300-922X

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 118:22325

AB Synthesis of the phosphate esters of several benzoin, variously substituted with methoxy groups in one or both aromatic rings, proceeds via the corresponding cyclic ethylene ketals. These are phosphitylated with bis-(2-cyanoethyl) diisopropylphosphoramidite and the phosphites are oxidized to phosphates. Cleavage of the 2-cyanoethyl groups with methanolic alkali, followed by acid-catalyzed hydrolysis of the ethylene ketal, yields the required phosphate monoesters. Application of the same reaction sequence to benzoin itself, not protected as the cyclic ketal, leads to at least three products, a phosphate monoester, a phosphate diester, and a substance not containing phosphorus, which appeared to be a ketal. The likely origin of these three products is discussed. The potential of these phosphate esters and their derivs. for study of rapid biochem. processes by fast photochem. cleavage of the benzoin group was examined. Best results were obtained with a 3',5'-dimethoxybenzoin phosphate, where a single pulse of 347 nm light (100 mJ in 50 ns) resulted in 10% conversion into products, with first-order rate constant > 10⁵ s⁻¹.

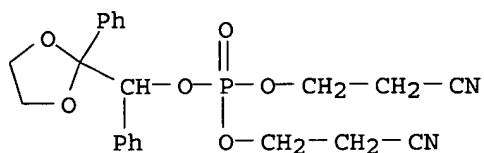
IT 144758-81-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, with methanolic alkali)

RN 144758-81-6 HCAPLUS

CN Phosphoric acid, bis(2-cyanoethyl) phenyl(2-phenyl-1,3-dioxolan-2-yl)methyl ester (9CI) (CA INDEX NAME)

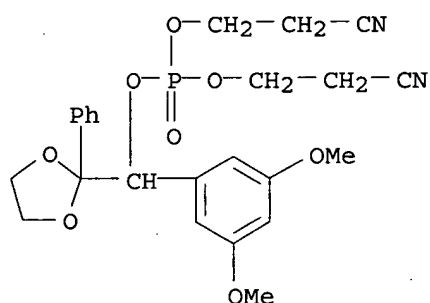


IT 144758-89-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 144758-89-4 HCAPLUS

CN Phosphoric acid, bis(2-cyanoethyl) (3,5-dimethoxyphenyl) (2-phenyl-1,3-dioxolan-2-yl)methyl ester (9CI) (CA INDEX NAME)



L7 ANSWER 13 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1992:174648 HCAPLUS

DOCUMENT NUMBER: 116:174648

TITLE: Synthesis of 9-(1-deoxy-4-phosphono-β-D-psicofuranosyl)-1,9-dihydro-6H-purin-6-one as a potential transition state analog inhibitor of purine nucleoside phosphorylase.

AUTHOR(S): Elliott, Robert D.; Niwas, Shri; Riordan, James M.; Montgomery, John A.; Secrist, John A., III

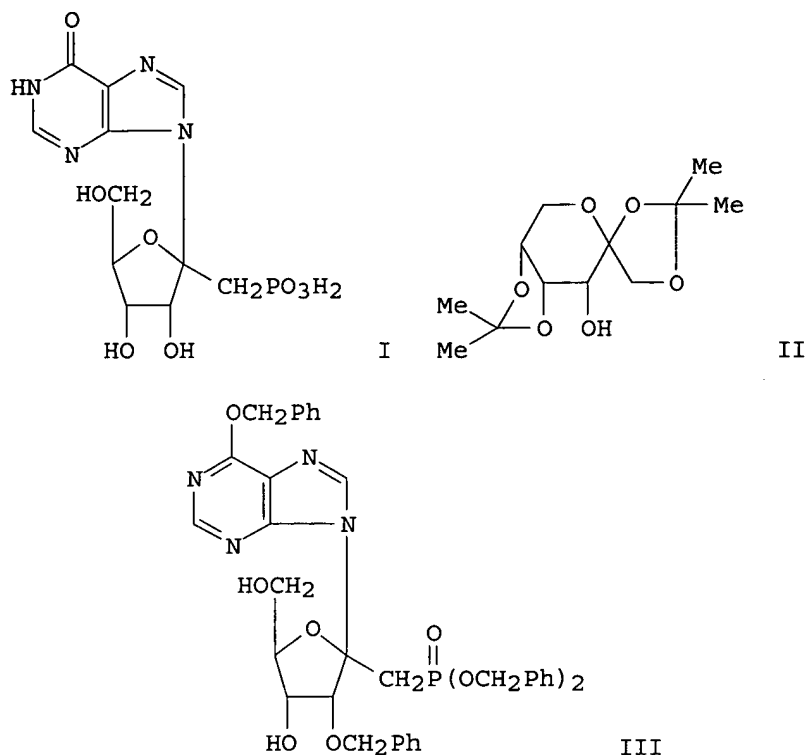
CORPORATE SOURCE: Kettering-Meyer Lab., South. Res. Inst., Birmingham, AL, 35255-5305, USA

SOURCE: Nucleosides & Nucleotides (1992), 11(1), 97-119
CODEN: NUNUD5; ISSN: 0732-8311

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB A fifteen-step synthesis of the proposed purine nucleoside phosphorylase (PNP) transition state analog inhibitor 9-(1-deoxy-1-phosphono- β -D-psicofuranosyl)-1,9-dihydro-H-purine-6-one (I) is described starting with 1,2:4,5-diisopropylidene- β -D-psicopyranose (II). Catalytic hydrogenation of 9-[3-O-benzyl-1-(dibenzoyloxyphosphinyl)-1-deoxy- β -D-psicofuranosyl]-6-benzoyloxypurine (III) under basic conditions gave the unstable I which was found to have a half-life of 39 min at pH 7 and 81 min at pH 8. The low PNP inhibitory activity found for I (IC_{50} = 25 μ M at 50 mM phosphate concentration) may be due entirely to the presence of the decomposition product hypoxanthine which is itself an inhibitor (IC_{50} = 8.6 μ M).

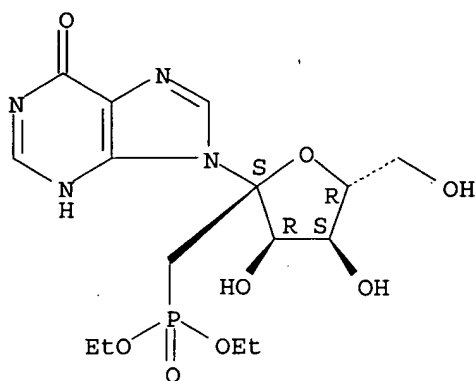
IT 139764-84-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and attempted deesterification of)

RN 139764-84-4 HCAPLUS

CN 6H-Purin-6-one, 9-[1-deoxy-1-(diethoxyphosphinyl)- β -D-psicofuranosyl]-1,9-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



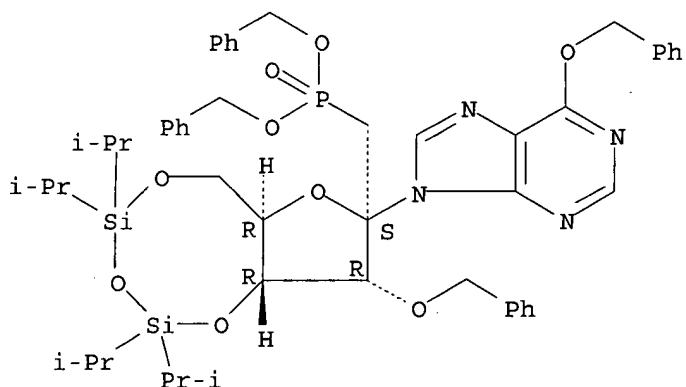
IT 139764-89-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and desilylation of)

RN 139764-89-9 HCAPLUS

CN 9H-Purine, 9-[1-[bis(phenylmethoxy)phosphinyl]-1-deoxy-3-O-(phenylmethyl)-4,6-O-[1,1,3,3-tetrakis(1-methylethyl)-1,3-disiloxanediyl]-β-D-psicofuranosyl]-6-(phenylmethoxy)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



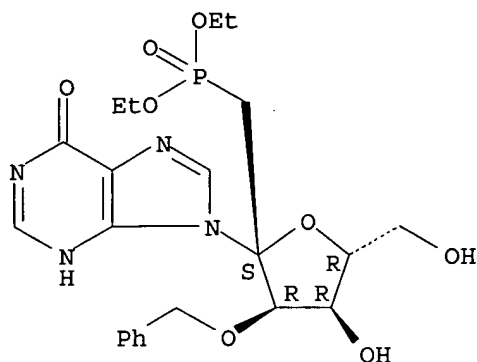
IT 139764-83-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrogenolysis of)

RN 139764-83-3 HCAPLUS

CN 6H-Purin-6-one, 9-[1-deoxy-1-(diethoxyphosphinyl)-3-O-(phenylmethyl)-β-D-psicofuranosyl]-1,9-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



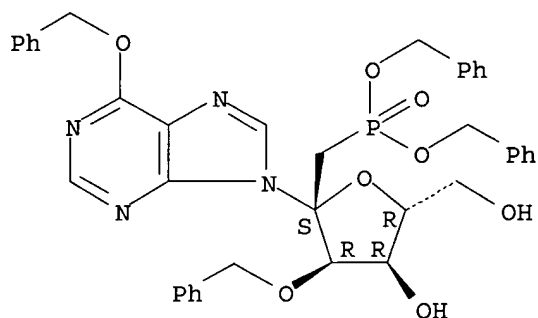
IT 139764-90-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and partial hydrogenolysis of)

RN 139764-90-2 HCAPLUS

CN 9H-Purine, 9-[1-[bis(phenylmethoxy)phosphinyl]-1-deoxy-3-O-(phenylmethyl)-β-D-psicofuranosyl]-6-(phenylmethoxy)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 139764-81-1P 139764-85-5P 139764-88-8P

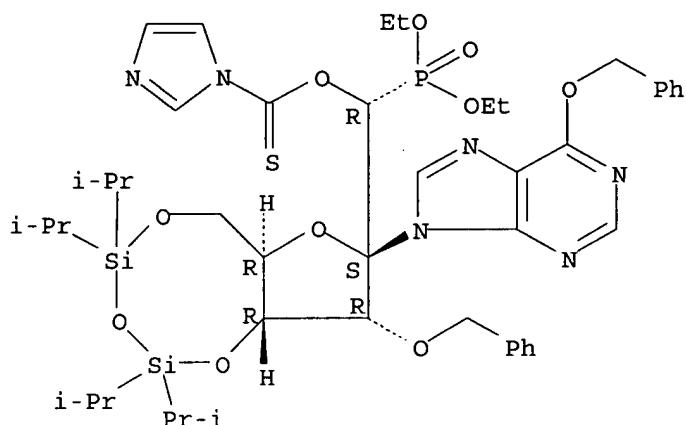
139764-95-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and reductive dethiocarbonylation of)

RN 139764-81-1 HCAPLUS

CN 9H-Purine, 9-[1-C-(diethoxyphosphinyl)-1-O-(1H-imidazol-1-ylthioxomethyl)-3-O-(phenylmethyl)-4,6-O-[1,1,3,3-tetrakis(1-methylethyl)-1,3-disiloxanediyl]-β-D-psicofuranosyl]-6-(phenylmethoxy)-, (R)- (9CI)
(CA INDEX NAME)

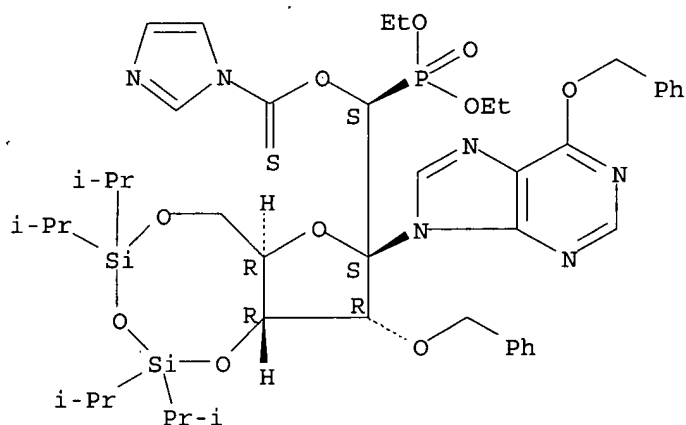
Absolute stereochemistry.



RN 139764-85-5 HCAPLUS

CN 9H-Purine, 9-[1-C-(diethoxyphosphinyl)-1-O-(1H-imidazol-1-ylthioxomethyl)-3-O-(phenylmethyl)-4,6-O-[1,1,3,3-tetrakis(1-methylethyl)-1,3-disiloxanediyl]-β-D-psicofuranosyl]-6-(phenylmethoxy)-, (S)-(9CI)
(CA INDEX NAME)

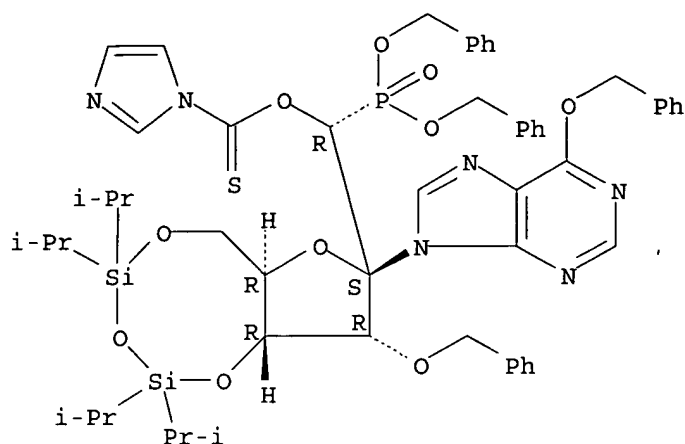
Absolute stereochemistry.



RN 139764-88-8 HCAPLUS

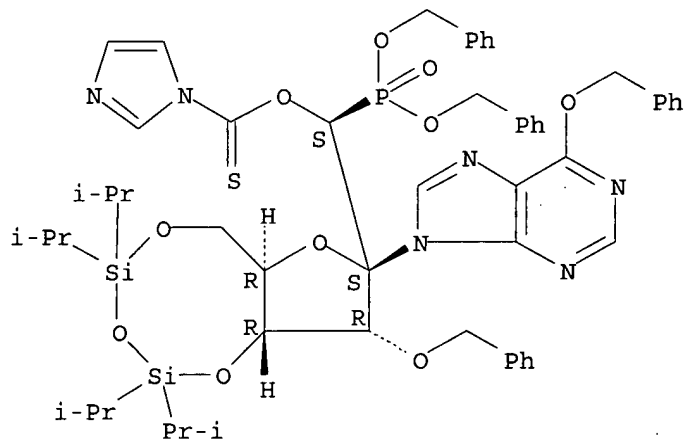
CN 9H-Purine, 9-[1-C-[bis(phenylmethoxy)phosphinyl]-1-O-(1H-imidazol-1-ylthioxomethyl)-3-O-(phenylmethyl)-4,6-O-[1,1,3,3-tetrakis(1-methylethyl)-1,3-disiloxanediyl]-β-D-psicofuranosyl]-6-(phenylmethoxy)-, (R)-(9CI)
(CA INDEX NAME)

Absolute stereochemistry.



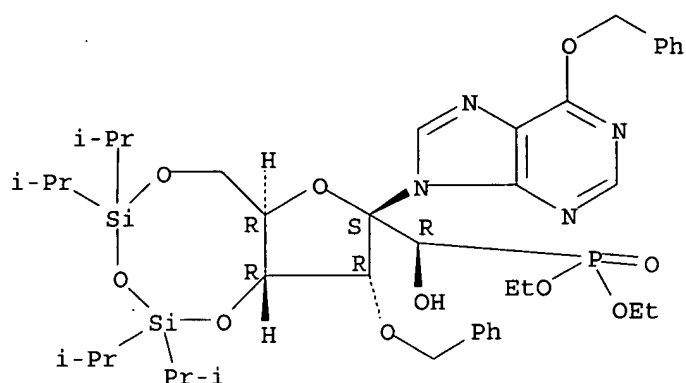
RN 139764-95-7 HCAPLUS
 CN 9H-Purine, 9-[1-C-[bis(phenylmethoxy)phosphinyl]-1-O-(1H-imidazol-1-ylthioxomethyl)-3-O-(phenylmethyl)-4,6-O-[1,1,3,3-tetrakis(1-methylethyl)-1,3-disiloxanediyl]-β-D-psicofuranosyl]-6-(phenylmethoxy)-, (S)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 139764-80-0P 139764-86-6P 139764-87-7P
 139764-94-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and thiocarbonylation of)
 RN 139764-80-0 HCAPLUS
 CN 9H-Purine, 9-[1-C-(diethoxyphosphinyl)-3-O-(phenylmethyl)-4,6-O-[1,1,3,3-tetrakis(1-methylethyl)-1,3-disiloxanediyl]-β-D-psicofuranosyl]-6-(phenylmethoxy)-, (R)-(9CI) (CA INDEX NAME)

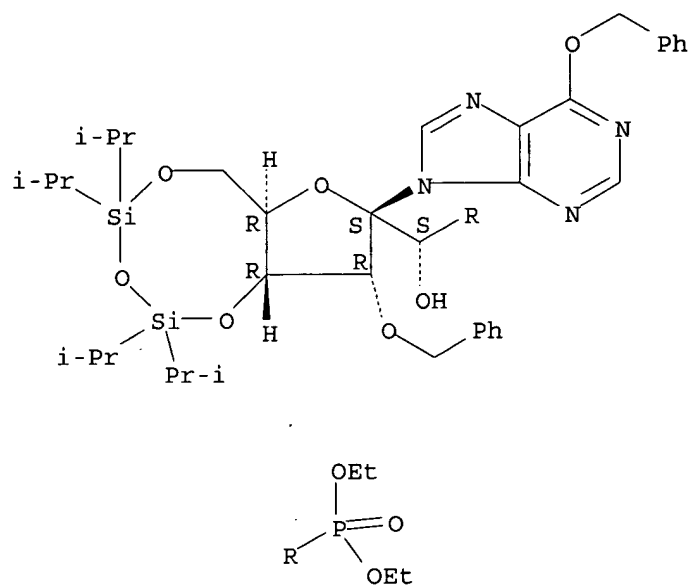
Absolute stereochemistry.



RN 139764-86-6 HCAPLUS

CN 9H-Purine, 9-[1-C-(diethoxyphosphinyl)-3-O-(phenylmethyl)-4,6-O-[1,1,3,3-tetrakis(1-methylethyl)-1,3-disiloxanediyl]-β-D-psicofuranosyl]-6-(phenylmethoxy)-, (S)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

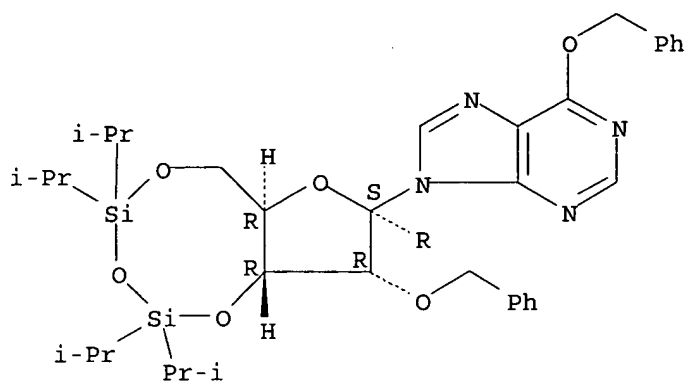


RN 139764-87-7 HCAPLUS

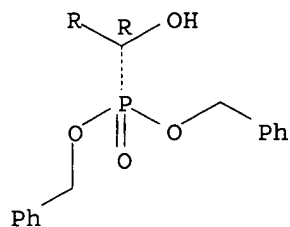
CN 9H-Purine, 9-[1-C-[bis(phenylmethoxy)phosphinyl]-3-O-(phenylmethyl)-4,6-O-[1,1,3,3-tetrakis(1-methylethyl)-1,3-disiloxanediyl]-β-D-psicofuranosyl]-6-(phenylmethoxy)-, (R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



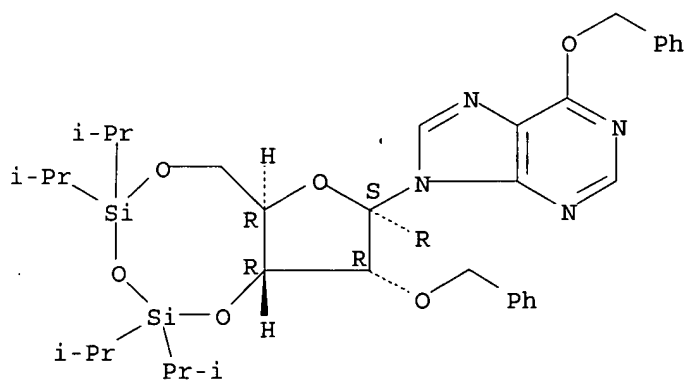
PAGE 2-A

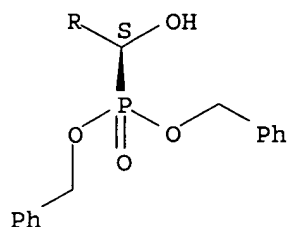


RN 139764-94-6 HCAPLUS
 CN 9H-Purine, 9- [1-C- [bis (phenylmethoxy) phosphinyl] -3-O- (phenylmethyl) -4,6-O-
 [1,1,3,3-tetrakis (1-methylethyl) -1,3-disiloxanediyl] -β-D-
 psicofuranosyl] -6- (phenylmethoxy) -, (S) - (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A





IT 139764-82-2P

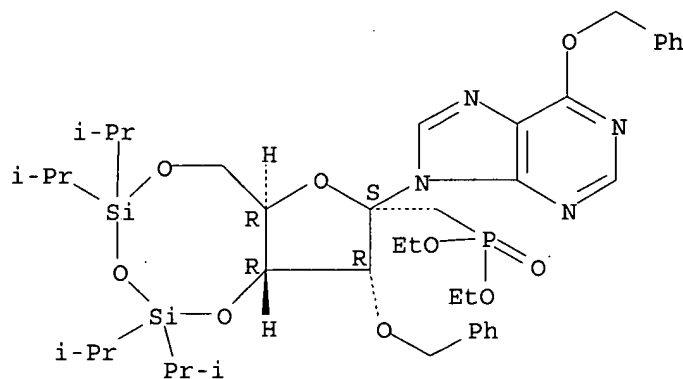
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation, desilylation, and hydrogenolysis of)

RN 139764-82-2 HCAPLUS

CN 9H-Purine, 9-[1-deoxy-1-(diethoxyphosphinyl)-3-O-(phenylmethyl)-4,6-O-[1,1,3,3-tetrakis(1-methylethyl)-1,3-disiloxanediyl]-β-D-psicofuranosyl]-6-(phenylmethoxy)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 14 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1992:6931 HCAPLUS

DOCUMENT NUMBER: 116:6931

TITLE: Synthesis and characterization of β-phosphorus analogs of aspartic acid derivatives:

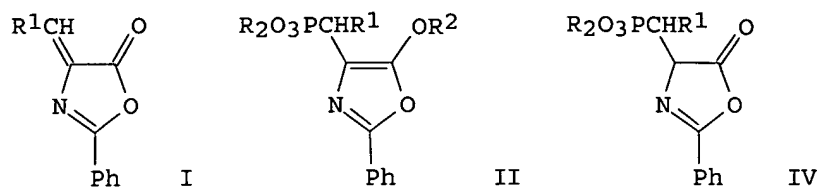
2-amino-3-aryl-3-phosphorylpropionic acid derivatives
AUTHOR(S): Preussler, Carola; Schnepf, Kathrin; Kellner, Kurt
CORPORATE SOURCE: Fachbereich Chem., Martin-Luther-Univ., Halle/Saale, O-4050, GermanySOURCE: Liebigs Annalen der Chemie (1991), (11), 1165-70
CODEN: LACHDL; ISSN: 0170-2041

DOCUMENT TYPE: Journal

LANGUAGE: German

OTHER SOURCE(S): CASREACT 116:6931

GI



AB Addition of alkali dialkyl phosphites NaOP(OR)_2 ($\text{R} = \text{Me, Et, CHMe}_2, \text{Bu}$) to benzylidenedihydrooxazolones I [$\text{R}^1 = \text{Ph, 4-MeOC}_6\text{H}_4, 3,4\text{-(MeO)}_2\text{C}_6\text{H}_3$] gave phosphorylmethyl derivs. II ($\text{R}_2 = \text{Na}$), which reacted with Me_3SiCl to give siloxy derivs. II ($\text{R}_2 = \text{SiMe}_3$). Treatment of II ($\text{R}_2 = \text{SiMe}_3$) with water or alcs. gave the title compds. $\text{R}_2\text{O}_3\text{PCHR}^1\text{CH(NHBz)CO}_2\text{R}_3$ (III; $\text{R}_3 = \text{H, Me, Et}$). The ratio of diastereomers of III depends on the reaction conditions, with different diastereoselectivity observed in basic and acidic conditions. The proposed reaction pathway is supported by characterization of intermediate dialkylphosphorylmethyloxazolone IV [$\text{R} = \text{Et, R}^1 = 3,4\text{-(MeO)}_2\text{C}_6\text{H}_3$]. Complete hydrolysis of III [$\text{R} = \text{Et, R}^1 = 3,4\text{-(MeO)}_2\text{C}_6\text{H}_3, \text{R}_3 = \text{Me}$] gave 3-phosphonoaspartic acid $\text{H}_2\text{O}_3\text{PCHR}^1\text{CH(NH}_2\text{)CO}_2\text{H.HCl}$ ($\text{R}^1 = \text{same}$).

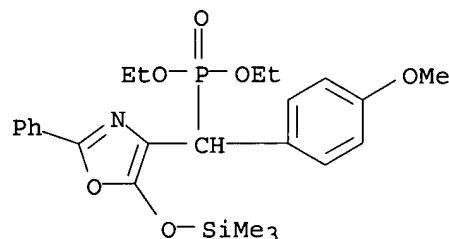
IT **135887-79-5P 135887-80-8P 135887-81-9P**

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation and hydrolysis and solvolysis of, stereochem. of)

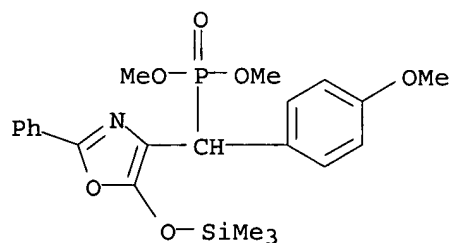
RN 135887-79-5 HCAPLUS

CN Phosphonic acid, [(4-methoxyphenyl)[2-phenyl-5-[(trimethylsilyl)oxy]-4-oxazolyl]methyl]-, diethyl ester (9CI) (CA INDEX NAME)



RN 135887-80-8 HCAPLUS

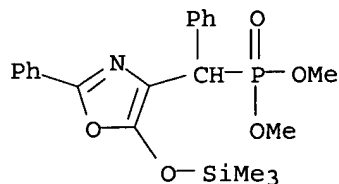
CN Phosphonic acid, [(4-methoxyphenyl)[2-phenyl-5-[(trimethylsilyl)oxy]-4-oxazolyl]methyl]-, dimethyl ester (9CI) (CA INDEX NAME)



RN 135887-81-9 HCAPLUS

CN Phosphonic acid, [phenyl[2-phenyl-5-[(trimethylsilyl)oxy]-4-

oxazolyl)methyl]-, dimethyl ester (9CI) (CA INDEX NAME)

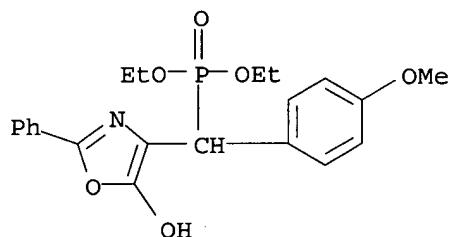


IT 135887-77-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and silylation of)

RN 135887-77-3 HCAPLUS

CN Phosphonic acid, [(5-hydroxy-2-phenyl-4-oxazolyl) (4-methoxyphenyl)methyl]-, diethyl ester, sodium salt (9CI) (CA INDEX NAME)



● Na

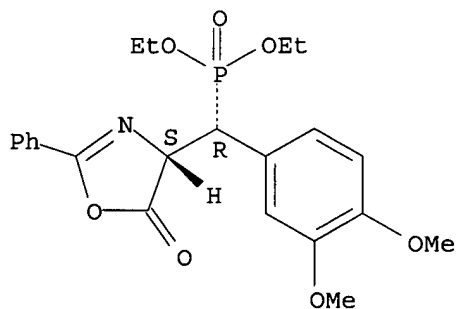
IT 135887-82-0P 135887-83-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 135887-82-0 HCAPLUS

CN Phosphonic acid, [(4,5-dihydro-5-oxo-2-phenyl-4-oxazolyl) (3,4-dimethoxyphenyl)methyl]-, diethyl ester, (R*,S*)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

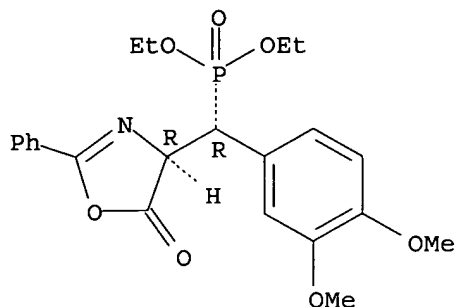


RN 135887-83-1 HCAPLUS

CN Phosphonic acid, [(4,5-dihydro-5-oxo-2-phenyl-4-oxazolyl) (3,4-

dimethoxyphenyl)methyl]-, diethyl ester, (R*,R*)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

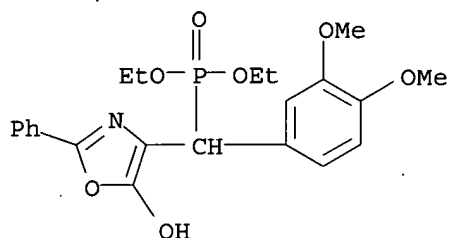


IT 135887-78-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, silylation, and methanolysis of)

RN 135887-78-4 HCAPLUS

CN Phosphonic acid, [(3,4-dimethoxyphenyl) (5-hydroxy-2-phenyl-4-oxazolyl)methyl]-, diethyl ester, potassium salt (9CI) (CA INDEX NAME)



● K

L7 ANSWER 15 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1991:492777 HCAPLUS

DOCUMENT NUMBER: 115:92777

TITLE: Synthesis of some mimics of nucleoside triphosphates

AUTHOR(S): Coe, Diane M.; Hilpert, Hans; Noble, Stewart A.; Peel, Michael R.; Roberts, Stanley M.; Storer, Richard

CORPORATE SOURCE: Dep. Chem., Exeter Univ., Exeter/Devon, EX4 4QD, UK

SOURCE: Journal of the Chemical Society, Chemical

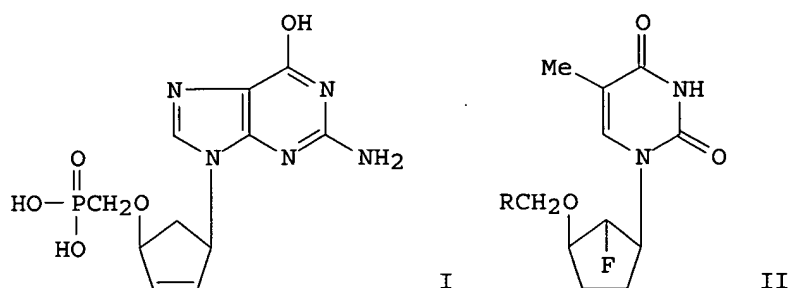
Communications (1991), (5), 312-14

CODEN: JCCCAT; ISSN: 0022-4936

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB Nucleotide analogs, e.g. I and II [R = P(O)(OH)₂], have been synthesized; the latter phosphonate was converted into the diphosphorylphosphonate II [R = P₃O₉H₄ (III)]. III was a potent inhibitor of HIV-coded reverse transcriptase.

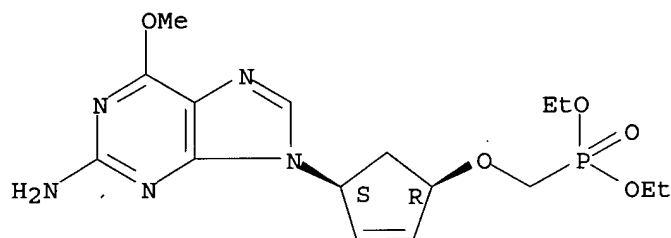
IT 135423-35-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and deblocking of)

RN 135423-35-7 HCAPLUS

CN Phosphonic acid, [[[4-(2-amino-6-methoxy-9H-purin-9-yl)-2-cyclopenten-1-yl]oxy]methyl]-, diethyl ester, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L7 ANSWER 16 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1990:612556 HCAPLUS

DOCUMENT NUMBER: 113:212556

TITLE: Synthesis and reactivity of five-membered cyclic phosphorylating reagents and other auxiliaries for the synthesis of oligonucleotides

AUTHOR(S): Ugi, Ivar; Bachmeier, Norbert; Herrmann, Rudolpf; Jacob, Peter; Karl, Rosmarie; Klein, Manuela; Landgraf, Bernd; Lemmen, Peter; Richter, Wolfgang; Verfuether, Uwe

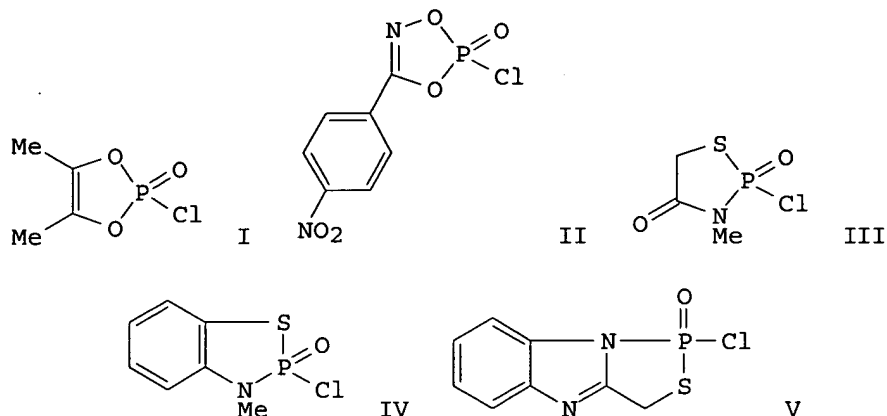
CORPORATE SOURCE: Inst. Org. Chem., Tech. Univ. Munich, Garching, D-8046, Germany

SOURCE: Phosphorus, Sulfur and Silicon and the Related Elements (1990), 51-52(1-4), 57-60
CODEN: PSSLEC; ISSN: 1042-6507

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB The 2-chloro-2-oxophospholes I-V were prepared and III was used as a phosphorylating reagent in the synthesis of a thymidine dinucleotide derivative. In addition, the 1,1-dianisyl-2,2,2-trichloroethyl (DATE) protective group, and the oxidation of P(III)-compds. by oxaziridines, including the destructively stereoselective oxidation of stereoisomeric P(III) compds. were presented.

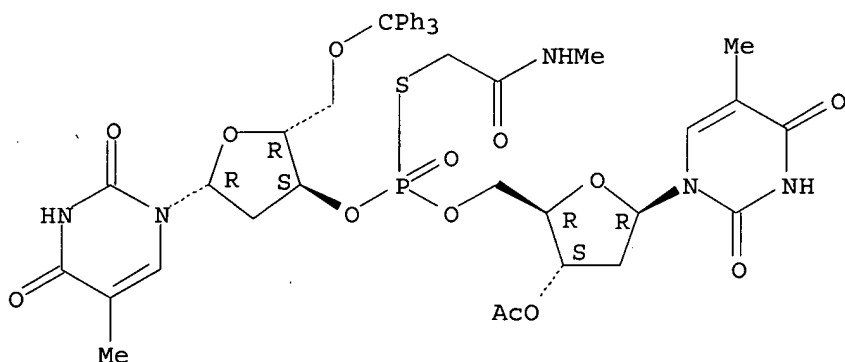
IT 130457-20-4P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, chlorothiaphosphole phosphorylation reagent in)

RN 130457-20-4 HCAPLUS

CN Thymidine, P(S)-[2-(methylamino)-2-oxoethyl]-P-thio-5'-O-(triphenylmethyl)thymidylyl-(3'→5')-, 3'-acetate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 17 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1990:553044 HCAPLUS

DOCUMENT NUMBER: 113:153044

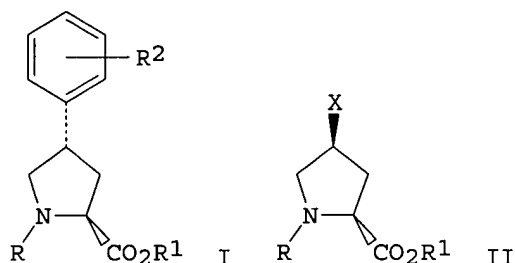
TITLE: Process for preparing trans-4-phenyl-L-proline derivatives as intermediates for angiotensin-converting enzyme (ACE) inhibitors

INVENTOR(S): Kronenthal, David; Kuester, Paula L.; Mueller, Richard H.

PATENT ASSIGNEE(S): E. R. Squibb and Sons, Inc., USA

SOURCE: U.S., 12 pp. Cont.-in-part of U.S. Ser. No. 61,511, abandoned.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|--|-------------|
| US 4912231 | A | 19900327 | US 1988-209165 | 19880617 |
| CA 1333807 | A1 | 19950103 | CA 1988-566007 | 19880505 |
| GB 2205832 | A1 | 19881221 | GB 1988-13659 | 19880609 |
| GB 2205832 | B2 | 19910717 | | |
| FR 2616431 | A1 | 19881216 | FR 1988-7841 | 19880613 |
| FR 2616431 | B1 | 19940812 | | |
| JP 01016761 | A2 | 19890120 | JP 1988-146690 | 19880614 |
| JP 08032677 | B4 | 19960329 | | |
| PRIORITY APPLN. INFO.: | | | US 1987-61511 | B2 19870615 |
| OTHER SOURCE(S): | | | CASREACT 113:153044; MARPAT 113:153044 | |
| GI | | | | |



AB Title derivs. I (R = N-protecting group; R₁ = H, aryl, alkyl; R₂ = H, halo; trans/cis ≥ 90:10) are prepared by Friedel-Crafts-type reaction of cis proline derivs. II (X = leaving group) with benzene, a halobenzene, or PhSiMe₃ in the presence of a Lewis acid catalyst at 5-80° under an inert atmosphere. The mol ratio of II to aromatic compound to catalyst is 1:(5-100):(2-10). For example, trans-4-hydroxy-L-proline was subjected to a sequence of N-benzoylation, Me esterification, O-tosylation, saponification, lactonization, **methanolysis**, O-mesylation, and saponification to give II (R = Bz, R₁ = H, X = MeSO₃). The mesylate was added to excess benzene and AlCl₃, followed by stirring for 7 h at room temperature, cooling, hydrolysis, and workup (2 crops) to give 81% I (R = Bz, R₁ = R₂ = H). Preps. of a variety of I and II are described.

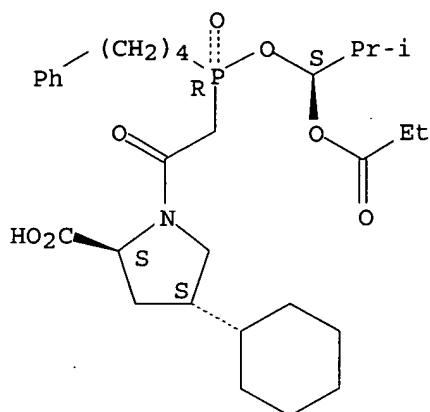
IT 98048-97-6, Fosinopril

RL: RCT (Reactant); RACT (Reactant or reagent)
 (intermediates for, preparation of phenylproline derivs. as)

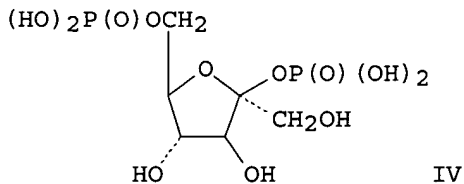
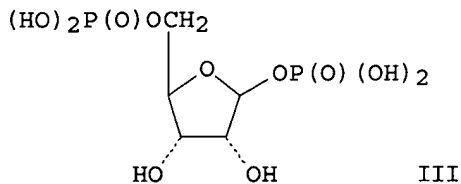
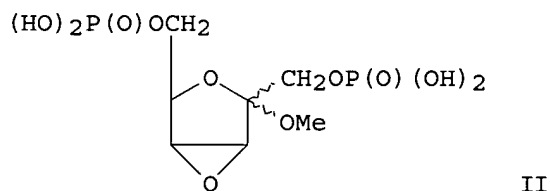
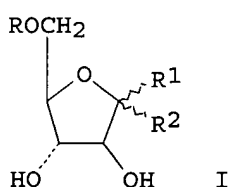
RN 98048-97-6 HCAPLUS

CN L-Proline, 4-cyclohexyl-1-[[(R)-[(1S)-2-methyl-1-(1-oxopropoxy)propoxy] (4-phenylbutyl)phosphinyl]acetyl]-, (4S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 18 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1989:231957 HCAPLUS
 DOCUMENT NUMBER: 110:231957
 TITLE: Synthesis of phosphates and phosphate isosteres of furanose sugars as potential enzyme inhibitors
 AUTHOR(S): Maryanoff, Bruce E.; Reitz, Allen B.; Nortey, Samuel O.
 CORPORATE SOURCE: Chem. Res. Dep., McNeil Pharm., Spring House, PA, 19477, USA
 SOURCE: Tetrahedron (1988), 44(11), 3093-106
 CODEN: TETRAB; ISSN: 0040-4020
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 110:231957
 GI



AB Various D-furanose monosaccharides were synthesized as possible inhibitors of the gluconeogenic enzyme fructose 1,6-bisphosphatase. These included sulfamate and phosphoramidate analogs, e.g. I [R = (HO)₂P(O), R₁ = MeO, R₂ = CH₂O₃SNMe₂; R = R₁ = H, R₁ = CH₂NHP(O)(OH)OMe] and II, analogs of the natural substrate, I [R = (HO)₂P(O), R₁ = OH, R₂ = CH₂OP(O)(OH)₂], and arabinose and ribose analogs, e.g., III, of a natural inhibitor, fructose 2,6-diphosphate IV. NMR studies were conducted to establish the

stereochem. of phosphate displacement at C(1) in the synthesis of arabinose 1-phosphate derivs. β -Ribose 1,5-diphosphate III was prepared with >95% stereoselectivity.

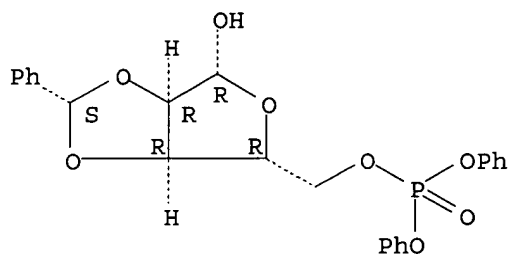
IT 119155-92-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and acetylation of)

RN 119155-92-9 HCAPLUS

CN β -D-Ribofuranose, 2,3-O-(phenylmethylene)-, 5-(diphenyl phosphate), (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



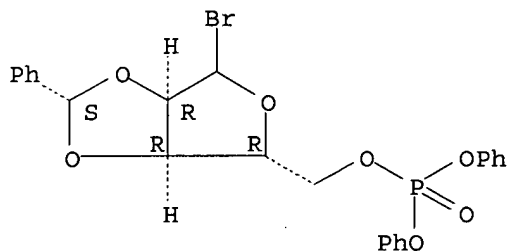
IT 119155-94-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and substitution reaction of, with dibenzyl phosphate)

RN 119155-94-1 HCAPLUS

CN D-Ribofuranosyl bromide, 2,3-O-(phenylmethylene)-, 5-(diphenyl phosphate), (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



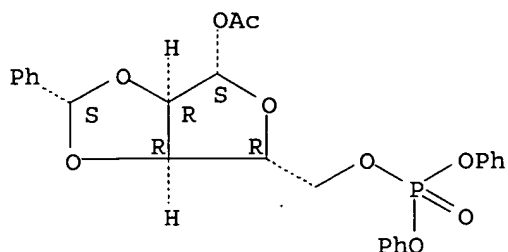
IT 119155-93-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, bromination, and hydrogenolysis of)

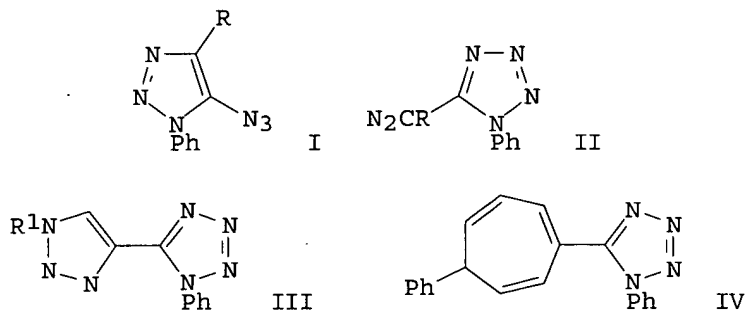
RN 119155-93-0 HCAPLUS

CN β -D-Ribofuranose, 2,3-O-(phenylmethylene)-, 1-acetate 5-(diphenyl phosphate), (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 19 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1989:95105 HCAPLUS
 DOCUMENT NUMBER: 110:95105
 TITLE: Synthesis and thermolysis of 4-substituted
 5-azido-1-phenyl-1,2,3-triazoles
 AUTHOR(S): L'abbe, Gerrit; Vandendriessche, Anna; Toppet, Suzanne
 CORPORATE SOURCE: Dep. Chem., Univ. Leuven, Heverlee, 3030, Belg.
 SOURCE: Tetrahedron (1988), 44(12), 3617-26
 CODEN: TETRAB; ISSN: 0040-4020
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 110:95105
 GI



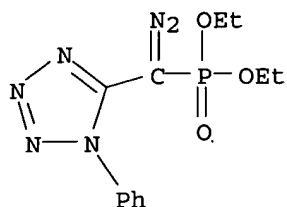
AB 5-Azido-1-phenyltriazoles I [R = CHO, CH:NR₁, 4-ClC₆H₄, 4-O₂NC₆H₄, PO(OEt)₂, PhSO₂; R₁ = Ph, 4-MeOC₆H₄, 4-ClC₆H₄, Et, CMe₃, CH₂Ph, OH) can thermally isomerize to diazo substituted tetrazoles II or decompose to alkylidenetetrazenes RC(CN):NN:NPh, depending on the nature of the substituent at the 4-position. The former are obtained for electron-withdrawing substituents [CHO, CH:NR₁, PO(OEt)₂, PhSO₂], whereas the latter are formed with aryl substituents. The diazo compds. II were stable and isolable when R = CHO or PO(Et)₂, but they ring-closed to triazoles III when R = CH:NR₁, or they decomposed under the reaction conditions to cycloheptatrienes, e.g. IV, when R = PhSO₂. A kinetic study of the rearrangement has been carried out and the mechanism is discussed.

IT 118946-75-1P

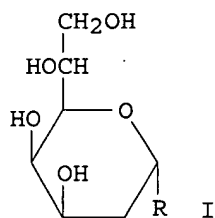
RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)

RN 118946-75-1 HCAPLUS

CN Phosphonic acid, [diazo(1-phenyl-1H-tetrazol-5-yl)methyl]-, diethyl ester
 (9CI) (CA INDEX NAME)



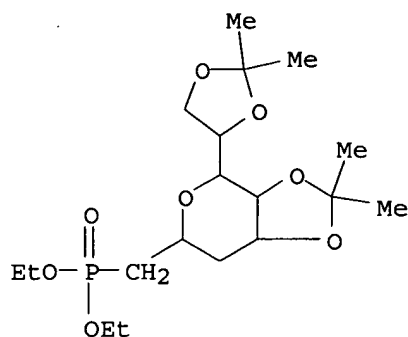
L7 ANSWER 20 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1988:204959 HCAPLUS
 DOCUMENT NUMBER: 108:204959
 TITLE: Synthesis of analogs of 3-deoxy-D-manno-octulosonic acid (KDO) as potential inhibitors of CMP-KDO synthetase
 AUTHOR(S): Luthman, Kristina; Claesson, Alf; Jansson, Anita M.; Pring, Brian G.
 CORPORATE SOURCE: Dep. Org. Pharm. Chem., Univ. Uppsala, Uppsala, S-751 23, Swed.
 SOURCE: Carbohydrate Research (1987), 166(2), 233-51
 CODEN: CRBRAT; ISSN: 0008-6215
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 108:204959
 GI



AB A series of derivs. I [R = CONH₂, CONHOH, CH₂OH, CH₂P(O)(OH)(ONH₄), CH₂CO₂Me, CH₂CO₂NH₄, CONHCH₂CO₂NH₄, CONHCH₂Ph, CONH(CH₂)₅Me, CO₂CH₂Ph, CO₂(CH₂)₅Me] of the 2-deoxy analog of β-KDO were prepared as potential inhibitors of CMP-KDO synthetase, starting from Me 2,6-anhydro-3-deoxy-4,5:7,8-di-O-isopropylidene-D-glycero-D-talo-octonate. Of these, I (R = CONHOH) was the best inhibitor of CMP-KDO synthetase, but was less potent than I (R = CO₂NH₄).

IT **114474-78-1P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation and deisopropylidenation of)

RN 114474-78-1 HCAPLUS
 CN D-glycero-D-manno-Octitol, 3,7-anhydro-6,8-dideoxy-8-(diethoxyphosphinyl)-1,2:4,5-bis-O-(1-ethylidene)- (9CI) (CA INDEX NAME)



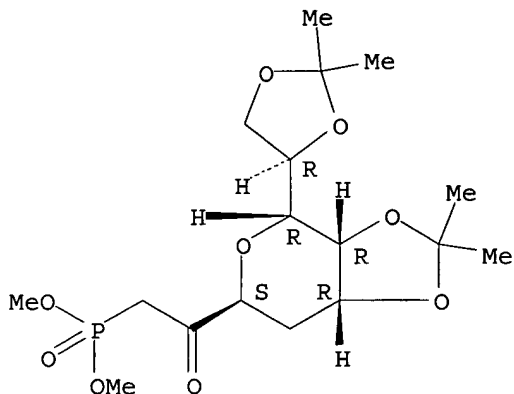
IT 114474-80-5P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as KDO analog)

RN 114474-80-5 HCAPLUS

CN D-glycero-D-talo-2-Nonulose, 3,7-anhydro-1,4-dideoxy-1-
(dimethoxyphosphinyl)-5,6:8,9-bis-O-(1-methylethylidene)- (9CI) (CA INDEX
NAME)

Absolute stereochemistry.



L7 ANSWER 21 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1985:45969 HCAPLUS

DOCUMENT NUMBER: 102:45969

TITLE: Pyrimidine derivatives and their use as pesticides

INVENTOR(S): Luethy, Christoph

PATENT ASSIGNEE(S): Hoffmann-La Roche, F., und Co. A.-G., Switz.

SOURCE: Eur. Pat. Appl., 76 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

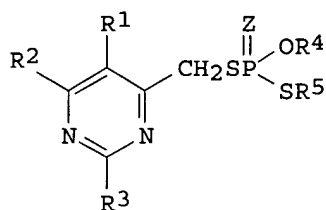
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|----------|-----------------|----------|
| EP 114045 | A1 | 19840725 | EP 1984-100062 | 19840104 |
| EP 114045 | B1 | 19860903 | | |

R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE

Mwaonicha 10_798880 - Part B

| | | | | |
|------------------------|----|----------|----------------|------------|
| AU 8322781 | A1 | 19840712 | AU 1983-22781 | 19831222 |
| US 4584295 | A | 19860422 | US 1983-566104 | 19831227 |
| ZA 8309717 | A | 19840829 | ZA 1983-9717 | 19831229 |
| DK 8400023 | A | 19840708 | DK 1984-23 | 19840103 |
| AT 21907 | E | 19860915 | AT 1984-100062 | 19840104 |
| ES 528700 | A1 | 19851101 | ES 1984-528700 | 19840105 |
| NO 8400053 | A | 19840709 | NO 1984-53 | 19840106 |
| BR 8400065 | A | 19840814 | BR 1984-65 | 19840106 |
| JP 59130897 | A2 | 19840727 | JP 1984-1248 | 19840107 |
| PRIORITY APPLN. INFO.: | | | CH 1983-89 | A 19830107 |
| | | | CH 1983-6214 | A 19831118 |
| | | | EP 1984-100062 | A 19840104 |

GI



I

AB Pyrimidine derivs. I [R1 = H, F, Cl; R2 = R1, C1-4 alkyl, C1-6 alkoxy, 2-propenyloxy, 2-propynyloxy, 2-(C1-4 alkoxy)ethoxy, halo (un)substituted PhO, C1-6 alkylthio, alkylamino, di(C1-4 alkyl)amino, OC(Z1)NR6R7, OP(S)(OR8)(OR9); R3 = R1, C1-6 alkyl, C3-6 cycloalkyl, (C1-4 alkoxy)methyl, (C1-4 alkylthio)methyl, C1-6 alkoxy, 2-propenyloxy, 2-propynyloxy, C1-6 alkylthio, C1-4 alkylamino, di(C1-4 alkyl)amino, Ph (un)substituted with F, Cl, CF3, and(or) MeO; R4 = C1-3 alkyl; R5 = C1-6 alkyl; R6 and R7 or R8 and R9 independently = C1-3 alkyl; Z, Z1 independently = O, S], useful as insecticides, nematocides, and acaricides (no data), were prepared by many methods. O-Alkylating 4-hydroxy-6-(chloromethyl)-2-methylpyrimidine with (EtO)2SO2 and K2CO3 in refluxing Me2CO 6 h gave the 4-ethoxy analog which reacted with KSP(O)(OEt)SPr in Me2CO containing a small amount of NaI 12 h at 45° to give I (R1 = H, R2 = EtO, R3 = Me, R4 = Et, R5 = Pr, Z = O).

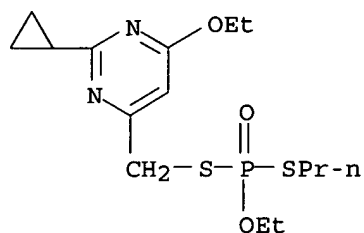
IT 94145-26-3P 94145-42-3P 94145-48-9P

94145-49-0P

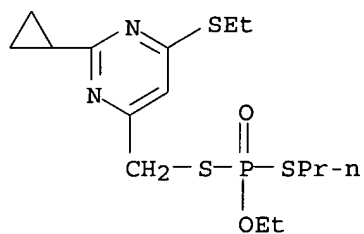
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses) (preparation of, as insecticide, acaricide, and(or) nematocide)

RN 94145-26-3 HCAPLUS

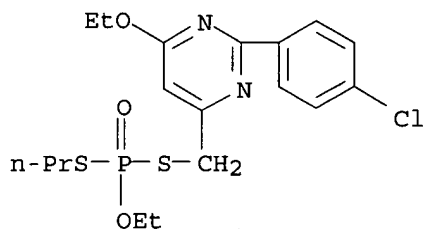
CN Phosphorodithioic acid, S-[(2-cyclopropyl-6-ethoxy-4-pyrimidinyl)methyl] O-ethyl S-propyl ester (9CI) (CA INDEX NAME)



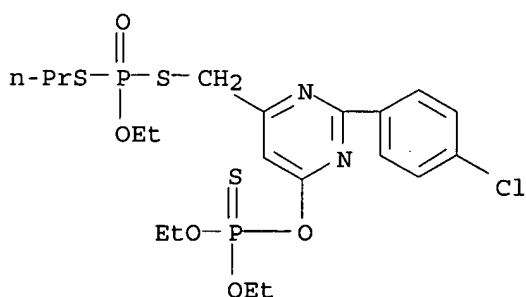
RN 94145-42-3 HCAPLUS
 CN Phosphorodithioic acid, S-[[2-cyclopropyl-6-(ethylthio)-4-pyrimidinyl]methyl] O-ethyl S-propyl ester (9CI) (CA INDEX NAME)



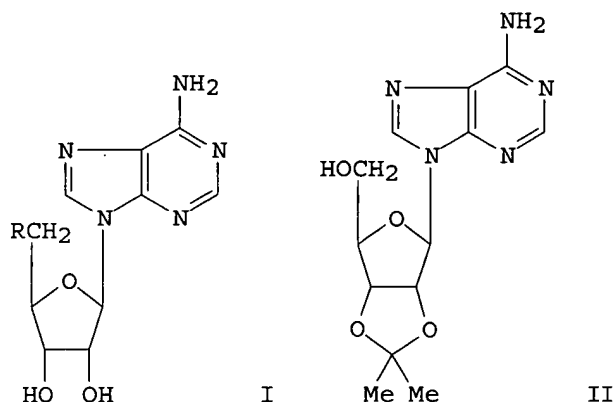
RN 94145-48-9 HCAPLUS
 CN Phosphorodithioic acid, S-[[2-(4-chlorophenyl)-6-ethoxy-4-pyrimidinyl]methyl] O-ethyl S-propyl ester (9CI) (CA INDEX NAME)



RN 94145-49-0 HCAPLUS
 CN Phosphorothioic acid, O-[2-(4-chlorophenyl)-6-ethoxy-4-pyrimidinyl] O,O-diethyl ester (9CI) (CA INDEX NAME)



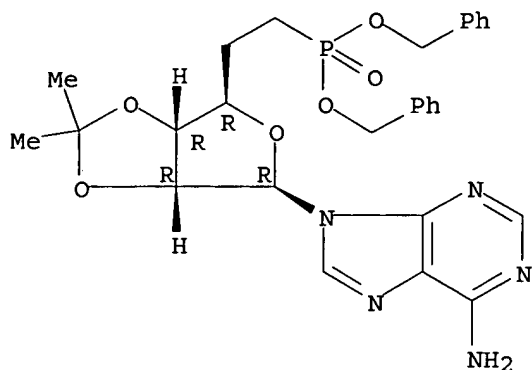
L7 ANSWER 22 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1984:139545 HCAPLUS
 DOCUMENT NUMBER: 100:139545
 TITLE: Synthesis and conformational analysis of some
 5'-homoadenosine derivatives
 AUTHOR(S): Hollmann, Juergen; Schlimme, Eckhard
 CORPORATE SOURCE: Lab. Biol. Chem., Univ. Paderborn, Paderborn, D-4790,
 Fed. Rep. Ger.
 SOURCE: Liebigs Annalen der Chemie (1984), (1), 98-107
 CODEN: LACHDL; ISSN: 0170-2041
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 GI



AB Homoadenosines I [R = CH₂OH, CH₂CH₂OH, CH₂P(O)(OH)₂] were prepared from adenosine II, e.g., II on sequential 5'-O-tosylation, 5'-cyanation, **methanolysis**, and NaBH₄ reduction gave I (R = CH₂OH). The conformational parameters of I were determined from the observed coupling consts. by the method of Altona and Sundoralingam.

IT **22257-14-3P**
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and deprotection of)
 RN 22257-14-3 HCAPLUS
 CN 9H-Purin-6-amine, 9-[6-[bis(phenylmethoxy)phosphinyl]-5,6-dideoxy-2,3-O-(1-methylethylidene)-β-D-ribo-hexofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 22257-13-2P

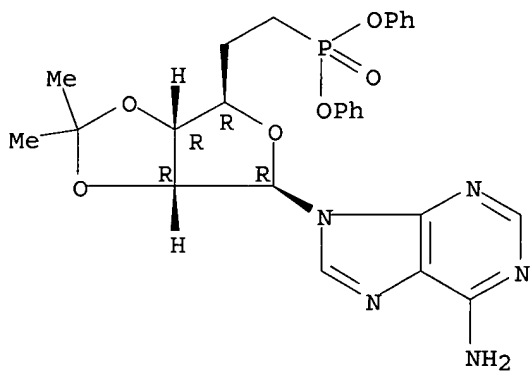
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, with benzyl alc.)

RN 22257-13-2 HCAPLUS

CN 9H-Purin-6-amine, 9-[5,6-dideoxy-6-(diphenoxymethylphosphoryl)-2,3-O-(1-methylethylidene)-β-D-ribo-hexofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 89301-78-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

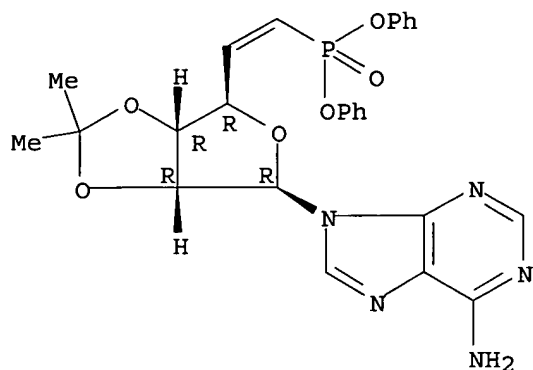
(preparation and reduction of)

RN 89301-78-0 HCAPLUS

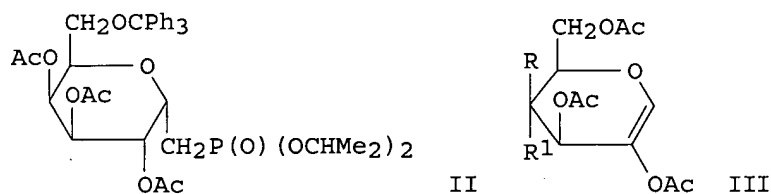
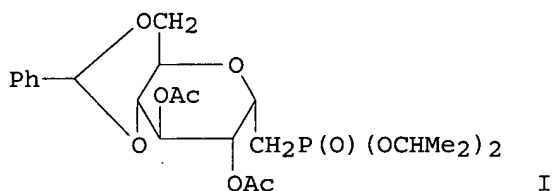
CN 9H-Purin-6-amine, 9-[5,6-dideoxy-6-(diphenoxymethylphosphoryl)-2,3-O-(1-methylethylidene)-β-D-ribo-hex-5-enofuranosyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

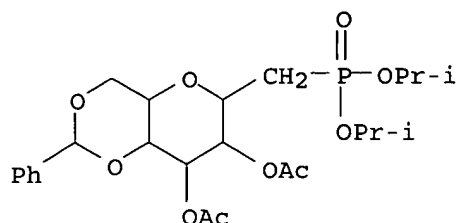
Double bond geometry unknown.



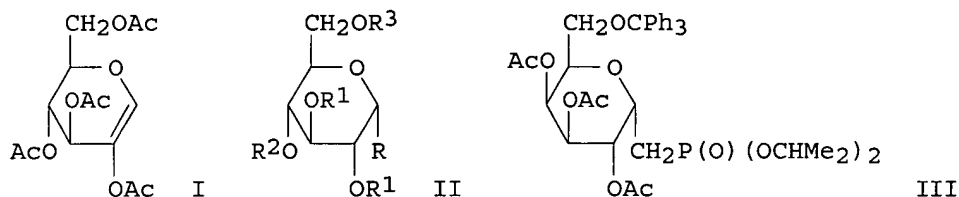
L7 ANSWER 23 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1982:20384 HCAPLUS
 DOCUMENT NUMBER: 96:20384
 TITLE: Synthesis of phosphonate analogs of
 α -D-glucopyranosyl and α -D-galactopyranosyl phosphate
 AUTHOR(S): Chmielewski, Marek; Bemiller, James N.; Cerretti, Douglas Pat
 CORPORATE SOURCE: Dep. Chem. Biochem., South. Illinois Univ., Carbondale, IL, 62901, USA
 SOURCE: Carbohydrate Research (1981), 97(2), C1-C4
 CODEN: CRBRAT; ISSN: 0008-6215
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB Phosphonates I and II were prepared from glycals III (R = H, R1 = OAc; R = OAc, R1 = H) resp., each in 6 steps.
 IT 79292-16-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 79292-16-3 HCAPLUS
 CN D-glycero-L-gulo-Heptitol, 2,6-anhydro-7-[bis(1-methylethoxy)phosphinyl]-7-deoxy-1,3-O-(phenylmethylene)-, 4,5-diacetate (9CI) (CA INDEX NAME)

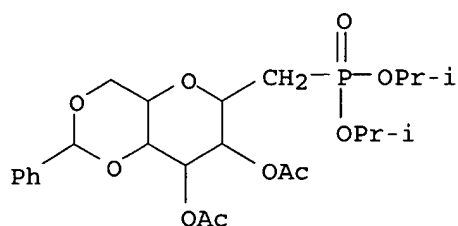


L7 ANSWER 24 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1981:551039 HCAPLUS
 DOCUMENT NUMBER: 95:151039
 TITLE: Synthesis of phosphonate analogs of
 α -D-glucopyranosyl and α -D-galactopyranosyl phosphate
 AUTHOR(S): Cerretti, Pat
 CORPORATE SOURCE: Dep. Chem. Biochem., South. Illinois Univ.,
 Carbondale, IL, 62901, USA
 SOURCE: Carbohydrate Research (1981), 94(2), C10-C13
 CODEN: CRBRAT; ISSN: 0008-6215
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 GI



AB Carbamoylation of glucal I with HCONH₂ gave a mixture of 3 products containing II (R = CONH₂, R₁ = R₂ = R₃ = Ac), which on sequential **methanolysis** and benzylidenation gave II (R = CO₂Me, R₁ = H, R₂R₃ = PhCH). The latter on NaBH₄ red. followed by iodination with N-iodosuccinimide-Ph₃P and acetylation with Ac₂O-pyridine gave II (R = CH₂I, R₁ = Ac, R₂R₃ = PhCH), which on Arbuzov reaction with (Me₂CHO)₃P gave the phosphonate [II; R = CH₂P(O)(OCHMe₂)₂, R₁ = Ac, R₂R₃ = PhCH]. Phosphonate III was similarly prepared from galactal analog of I.

IT 79292-16-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 79292-16-3 HCAPLUS
 CN D-glycero-L-gulo-Heptitol, 2,6-anhydro-7-[bis(1-methylethoxy)phosphinyl]-7-deoxy-1,3-O-(phenylmethylene)-, 4,5-diacetate (9CI) (CA INDEX NAME)



L7 ANSWER 25 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1981:533293 HCAPLUS

DOCUMENT NUMBER: 95:133293

TITLE: Positively charged analogs of oligonucleotides.
Synthesis of aminohexyl triester derivatives of
oligothymidylates and study of their complex-forming
properties

AUTHOR(S): Danilyuk, N. K.; Petrenko, V. A.; Pozdnyakov, P. I.;
Sivolobova, G. F.; Shubina, T. N.

CORPORATE SOURCE: Cent. Board Microbiol. Ind., All-Union Inst. Mol.
Biol., Novosibirsk, USSR

SOURCE: Bioorganicheskaya Khimiya (1981), 7(5), 703-9
CODEN: BIKHD7; ISSN: 0132-3423

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB A method for preparing triester alkyl derivs. of oligonucleotides was described which is based on oligonucleotide chlorophenyl ester reaction with amino alcs. in polar organic solvents in the presence of CsF or Bu₄N⁺F⁻. The latter compound is a more effective catalyst than CsF for transesterification. The amino group was inert under conditions of **alcoholysis**. 6-Aminohexyl triester analogs of thymidylyl- and pentathymidylyl-(3'→5')-thymidine were prepared. Complexing with polydeoxyadenylic acid was studied for aminohexyl and Et triester analogs, [Tp(nhx)]5T (nhx = 6-aminohexyl), [Tp(Et)]5T, and for [Tp]5T. A complex formed with pos. charged oligonucleotide [Tp(nhx)]5T had a higher thermal stability than those involving neg. charged [Tp]5T or neutral [Tp(Et)]5T.

IT 79105-43-4P

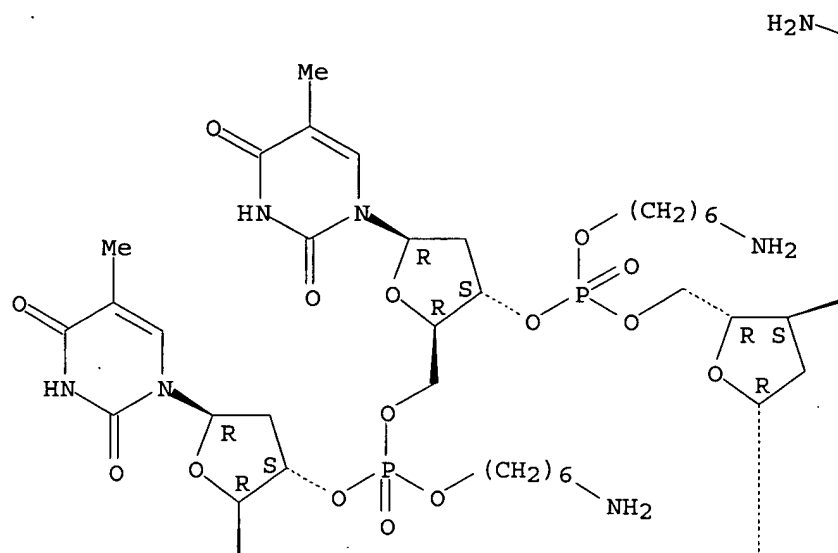
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and complex-forming properties with polydeoxyadenylates)

RN 79105-43-4 HCAPLUS

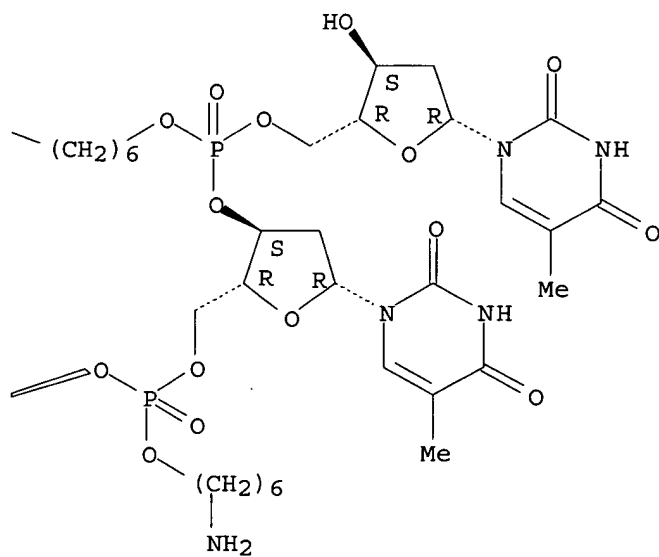
CN Thymidine, P-(6-aminohexyl)thymidylyl-(3'→5')-P-(6-aminohexyl)thymidylyl-(3'→5')-P-(6-aminohexyl)thymidylyl-(3'→5')-P-(6-aminohexyl)thymidylyl-(3'→5')-P-(6-aminohexyl)thymidylyl-(3'→5')- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

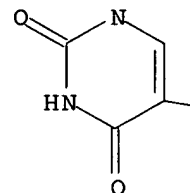
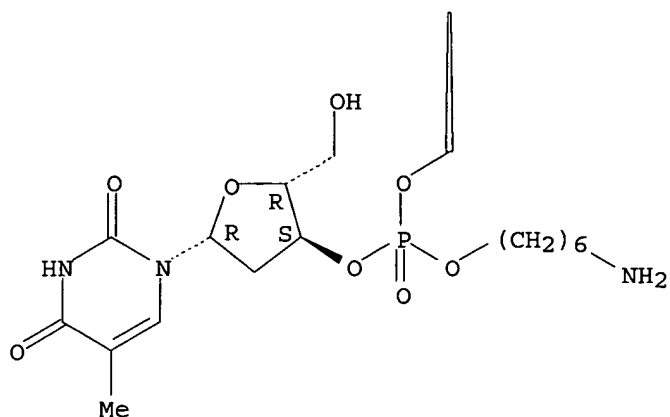
PAGE 1-A



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PAGE 2-A



PAGE 2-B

Me

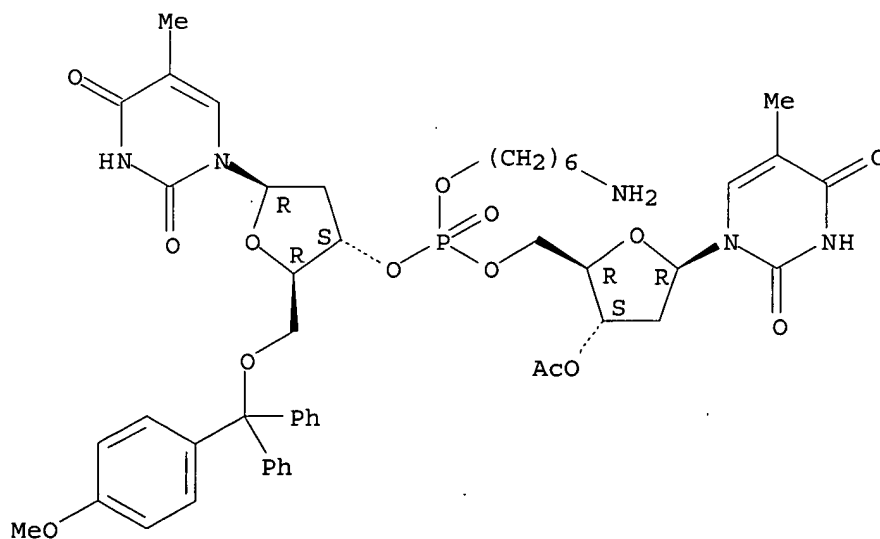
IT 79087-73-3P 79105-44-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and deprotection of)

RN 79087-73-3 HCAPLUS

CN Thymidine, P-(6-aminoheptyl)-5'-O-[(4-methoxyphenyl)diphenylmethyl]thymidyl-yl-(3'→5')-, 3'-acetate (9CI) (CA INDEX NAME)

Absolute stereochemistry.

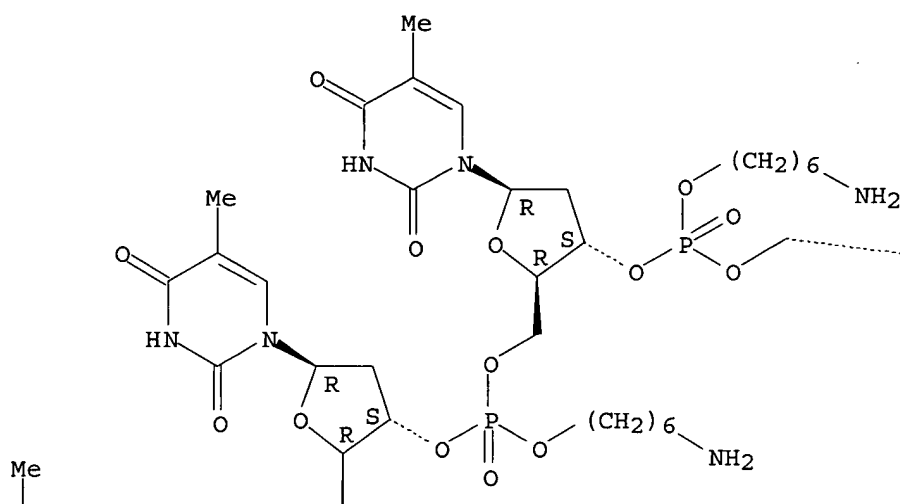


RN 79105-44-5 HCAPLUS

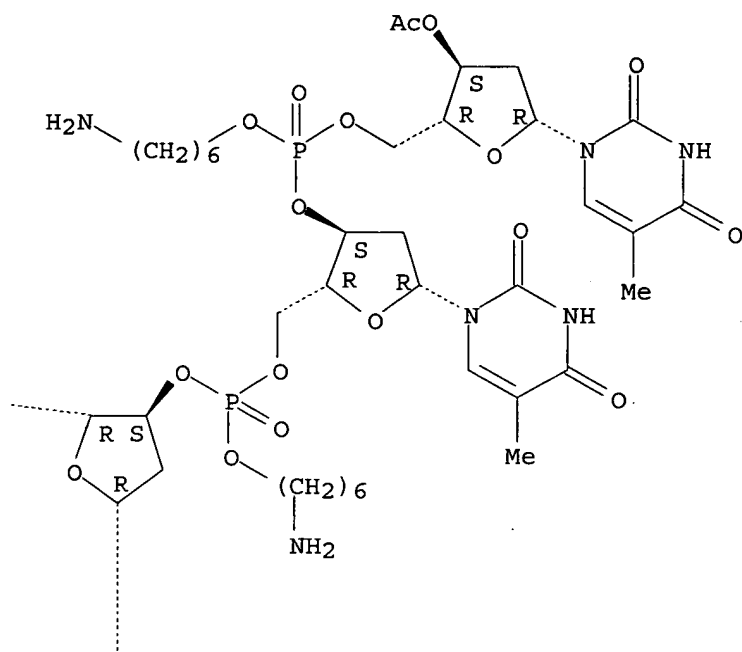
CN Thymidine, P-(6-aminoethyl)-5'-O-[(4-methoxyphenyl)diphenylmethyl]thymidyl
yl-(3'→5')-P-(6-aminoethyl)thymidylyl-(3'→5')-P-(6-
aminoethyl)thymidylyl-(3'→5')-P-(6-aminoethyl)thymidylyl-
(3'→5')-P-(6-aminoethyl)thymidylyl-(3'→5')-, 3'-acetate
(9CI) (CA INDEX NAME)

Absolute stereochemistry.

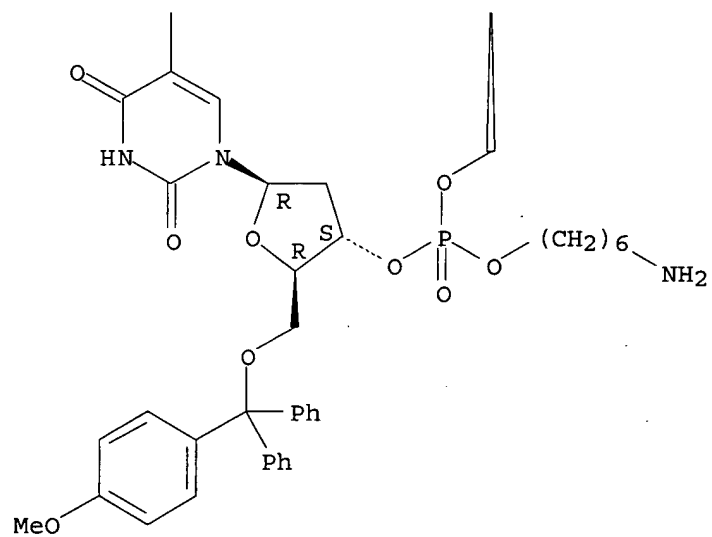
PAGE 1-A

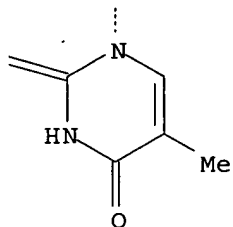


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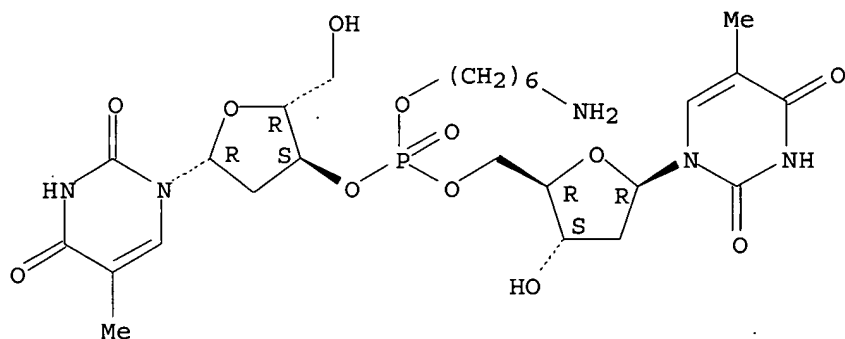
IT 79087-72-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 79087-72-2 HCAPLUS

CN Thymidine, P-(6-aminohexyl)thymidylyl-(3'→5')- (9CI) (CA INDEX
NAME)

Absolute stereochemistry.



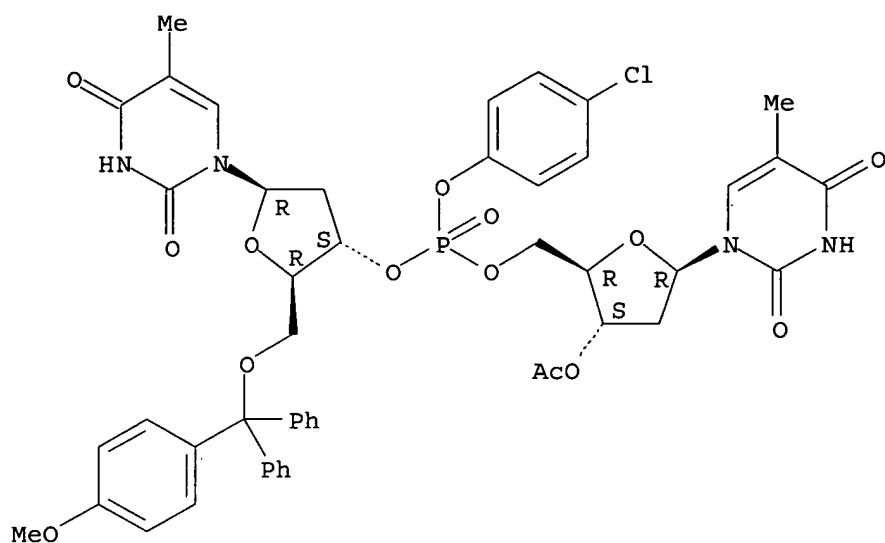
IT 79087-74-4 79105-45-6

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with aminoalcohol in presence of cesium fluoride or
tetrabutylammonium fluoride)

RN 79087-74-4 HCAPLUS

CN Thymidine, P-(4-chlorophenyl)-5'-O-[(4-methoxyphenyl)diphenylmethyl]thymid
ylyl-(3'→5')-, 3'-acetate (9CI) (CA INDEX NAME)

Absolute stereochemistry.

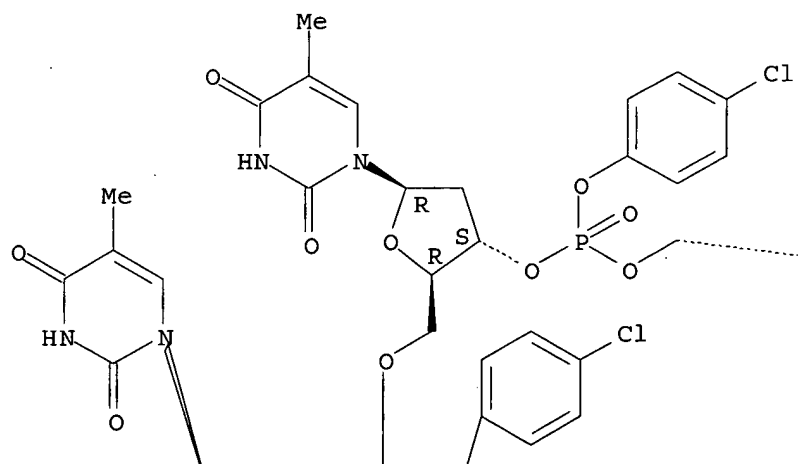


RN 79105-45-6 HCAPLUS

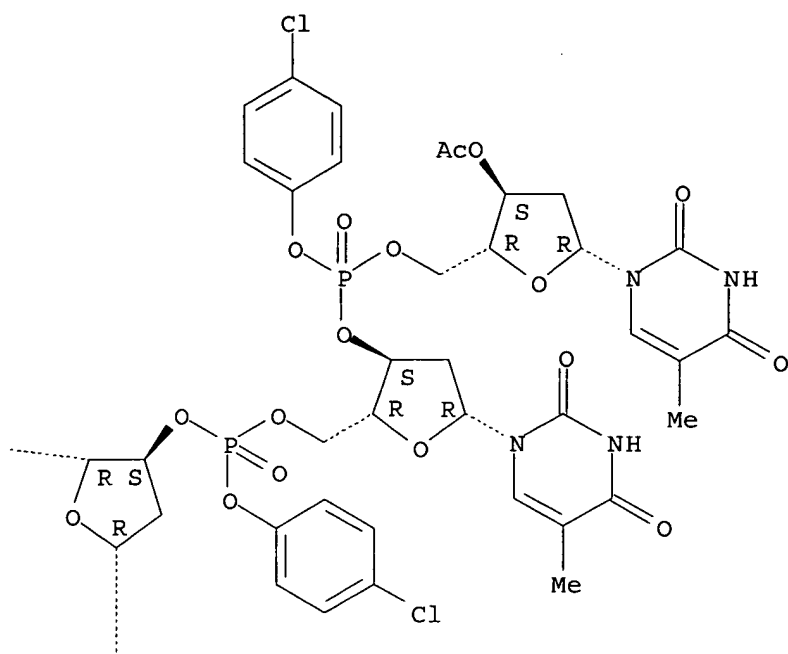
CN Thymidine, P-(4-chlorophenyl)-5'-O-[(4-methoxyphenyl)diphenylmethyl]thymidyl- (3'→5')-P-(4-chlorophenyl)thymidyl- (3'→5')-P-(4-chlorophenyl)thymidyl- (3'→5')-P-(4-chlorophenyl)thymidyl- (3'→5')-, 3'-acetate (9CI) (CA INDEX NAME)

Absolute stereochemistry.

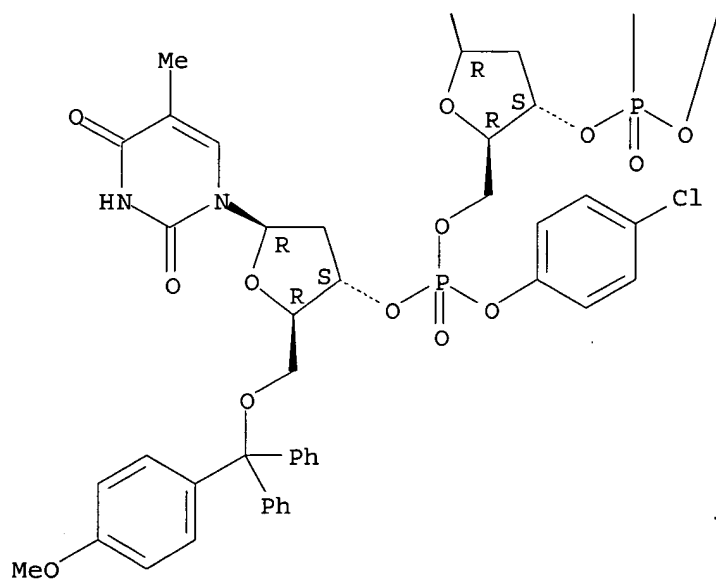
PAGE 1-A

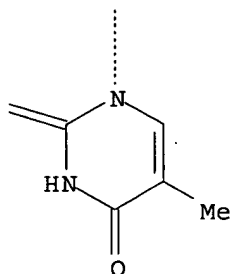


PAGE 1-B



PAGE 2-A





L7 ANSWER 26 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1980:76848 HCAPLUS

DOCUMENT NUMBER: 92:76848

TITLE: The synthesis of oligoribonucleotides. III. The use of silyl protecting groups in nucleoside and nucleotide chemistry. VIII

AUTHOR(S): Ogilvie, Kelvin K.; Schiffman, Aria L.; Penney, Christopher L.

CORPORATE SOURCE: Dep. Chem., McGill Univ., Montreal, QC, H3A 2K6, Can.

SOURCE: Canadian Journal of Chemistry (1979), 57(17), 2230-8
CODEN: CJCHAG; ISSN: 0008-4042

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The synthesis of all mono- and disilyl derivs. of cytidine, guanosine, and their N-benzoyl analogs using the tert-butyldimethylsilyl protecting group is described. These compds. and those containing a 5'-monomethoxytrityl group have been condensed via the phosphodichloridite procedure to give nucleotides rapidly and in good yields. The synthesis of 2'-5'-linked nucleotides is also described. Attempts to prepare 5'-monomethoxytritylguanosine gave instead a compound possessing a methoxytrityl group on the guanine ring, most likely at N2.

Methanolysis of 5'-(methoxytrityl)-2-O-(tert-butyldimethylsilyl)-N4-benzoylcytidine gave 5'-(methoxytrityl)-2-O-(tert-butyldimethylsilyl)cytidine and rearranged 5'-(methoxytrityl)-3-O-(tert-butyldimethylsilyl)cytidine.

IT 72447-08-6 72467-82-4

RL: RCT (Reactant); RACT (Reactant or reagent)
(nucleotide coupling reaction of)

RN 72447-08-6 HCAPLUS

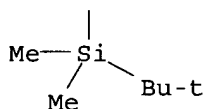
CN Cytidine, N-benzoyl-3'-O-[(1,1-dimethylethyl)dimethylsilyl]-P-(2,2,2-trichloroethyl)cytidyl-(2'→5')-N-benzoyl-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-B

—Ph

PAGE 2-A



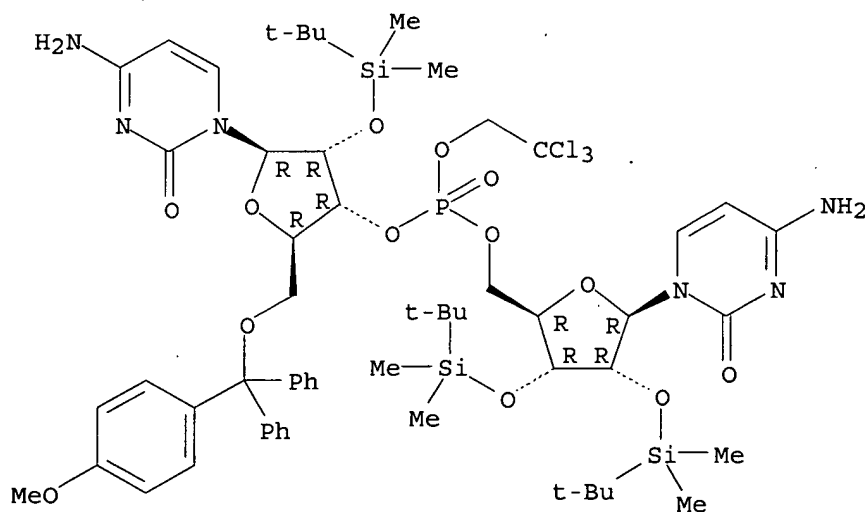
IT 72447-09-7P 72447-10-0P 72447-11-1P
 72447-12-2P 72447-13-3P 72447-14-4P
 72447-15-5P 72447-16-6P 72447-17-7P
 72467-83-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and deprotection of)

RN 72447-09-7 HCAPLUS

CN Cytidine, 2'-O-[(1,1-dimethylethyl)dimethylsilyl]-5'-O-[(4-methoxyphenyl)diphenylmethyl]-P-(2,2,2-trichloroethyl)cytidyl-
 (3'→5')-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA
 INDEX NAME)

Absolute stereochemistry.

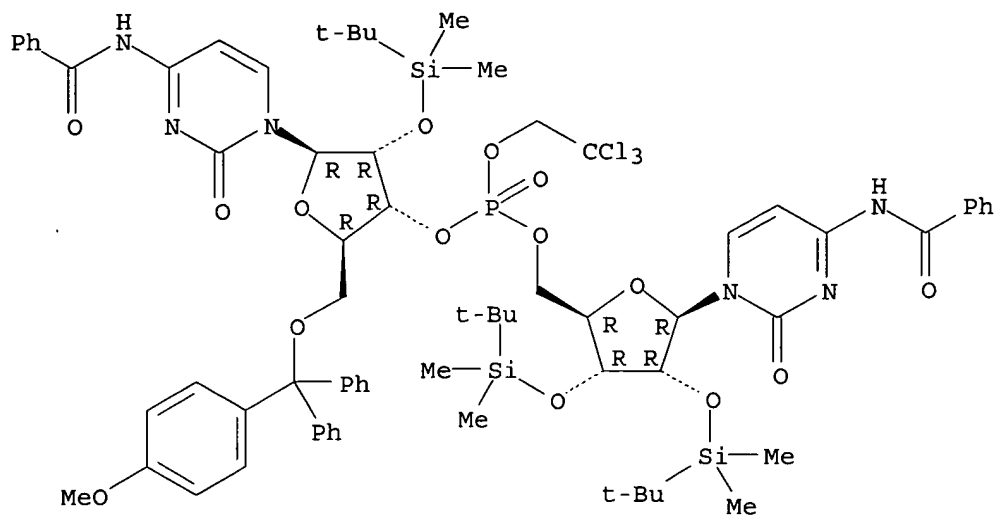


RN 72447-10-0 HCAPLUS

CN Cytidine, N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]-5'-O-[(4-

methoxyphenyl)diphenylmethyl]-P-(2,2,2-trichloroethyl)guanylyl-
(3'→5')-N-benzoyl-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]-
(9CI) (CA INDEX NAME)

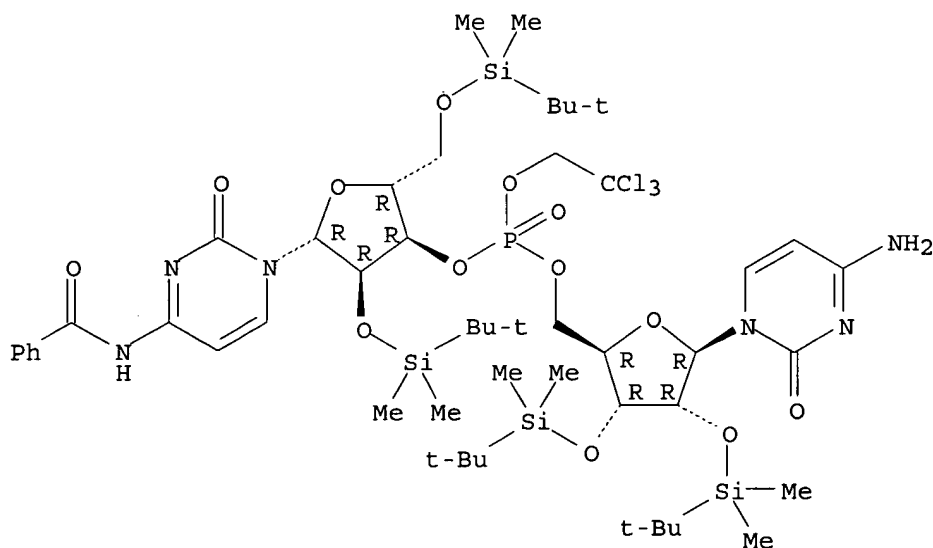
Absolute stereochemistry.



RN 72447-11-1 HCAPLUS

CN Cytidine, N-benzoyl-2',5'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]-P-
(2,2,2-trichloroethyl)cytidyl- (3'→5')-2',3'-bis-O-[(1,1-
dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

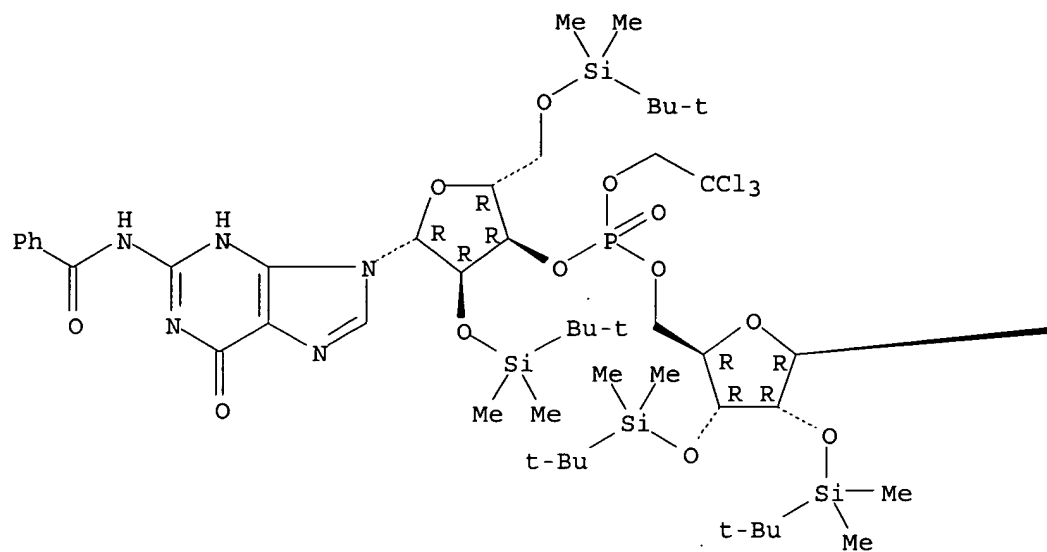


RN 72447-12-2 HCAPLUS

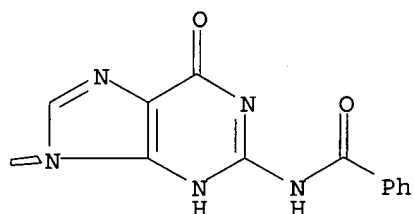
CN Guanosine, N-benzoyl-2',5'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]-P-
(2,2,2-trichloroethyl)guanylyl- (3'→5')-N-benzoyl-2',3'-bis-O-[(1,1-
dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

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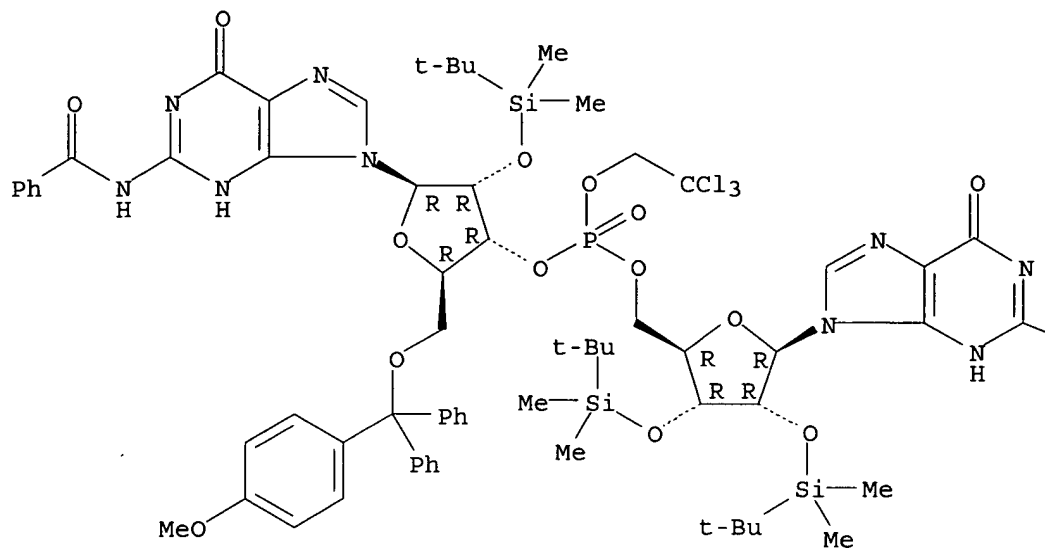


RN 72447-13-3 HCAPLUS

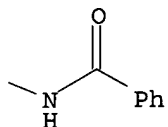
CN Guanosine, N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]-5'-O-[(4-methoxyphenyl)diphenylmethyl]-P-(2,2,2-trichloroethyl)guanylyl-(3'→5')-N-benzoyl-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]-
(9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

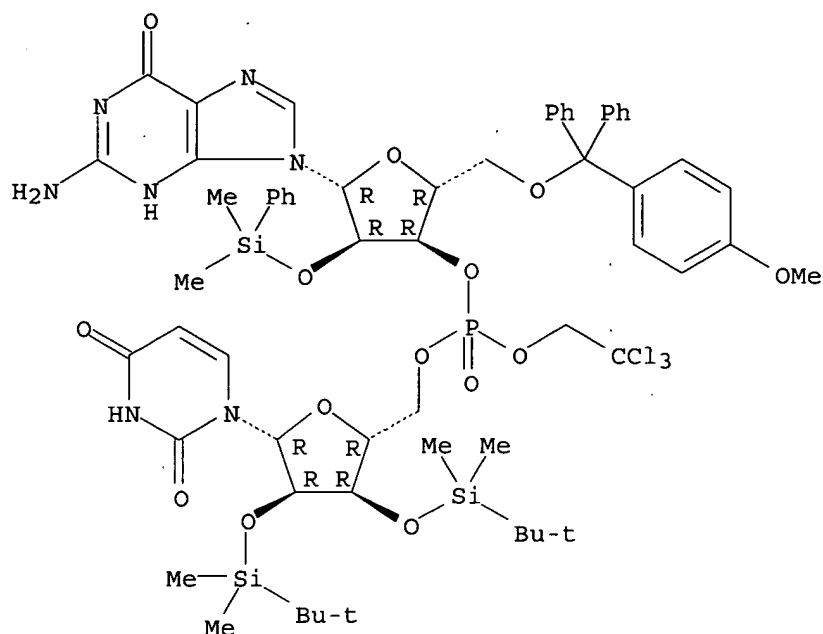


PAGE 1-B



RN 72447-14-4 HCAPLUS
 CN Uridine, 2'-O-(dimethylphenylsilyl)-5'-O-[(4-methoxyphenyl)diphenylmethyl]-
 P-(2,2,2-trichloroethyl)guanylyl-(3'→5')-2',3'-bis-O-[(1,1-
 dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

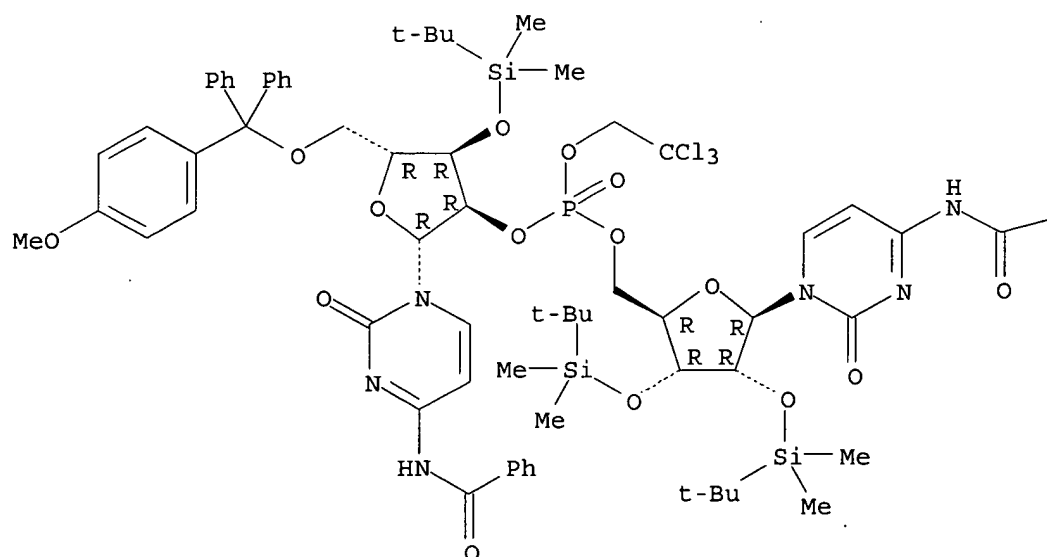


RN 72447-15-5 HCAPLUS

CN Cytidine, N-benzoyl-3'-O-[(1,1-dimethylethyl)dimethylsilyl]-5'-O-[(4-methoxyphenyl)diphenylmethyl]-P-(2,2,2-trichloroethyl)cytidyl-
(3'→5')-N-benzoyl-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]-
(9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



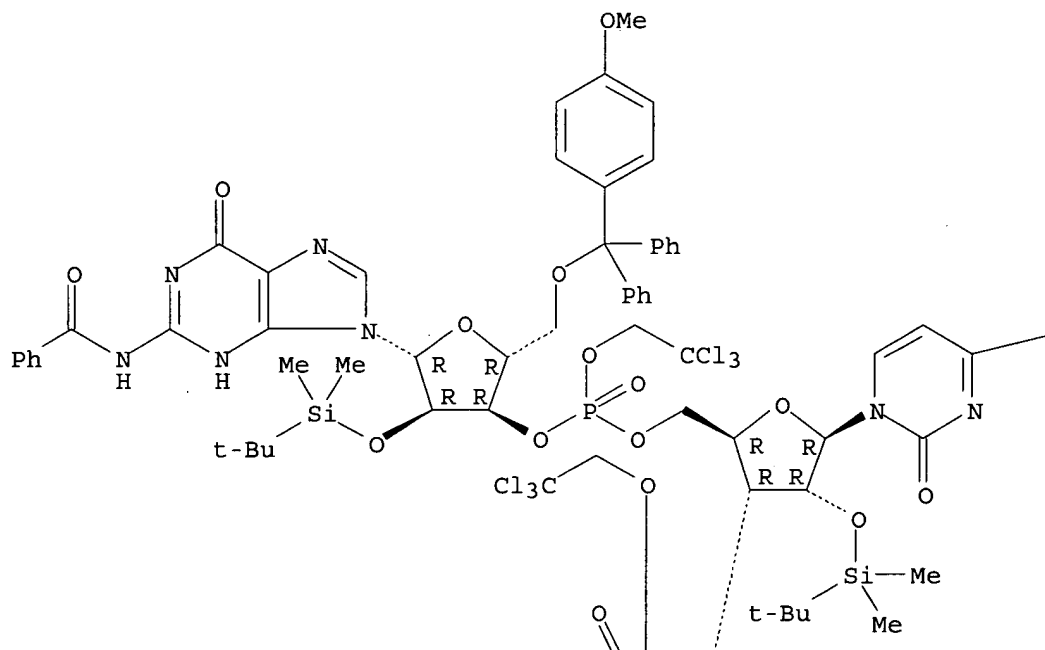
—Ph

RN 72447-16-6 HCAPLUS

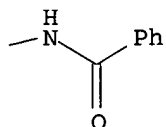
CN Cytidine, N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]-5'-O-[(4-methoxyphenyl)diphenylmethyl]-P-(2,2,2-trichloroethyl)guanylyl-(3'→5')-N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]-P-(2,2,2-trichloroethyl)cytidyl-(3'→5')-N-benzoyl-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

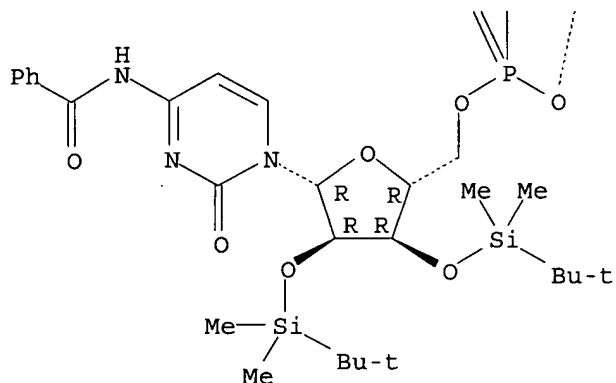
PAGE 1-A



PAGE 1-B



PAGE 2-A

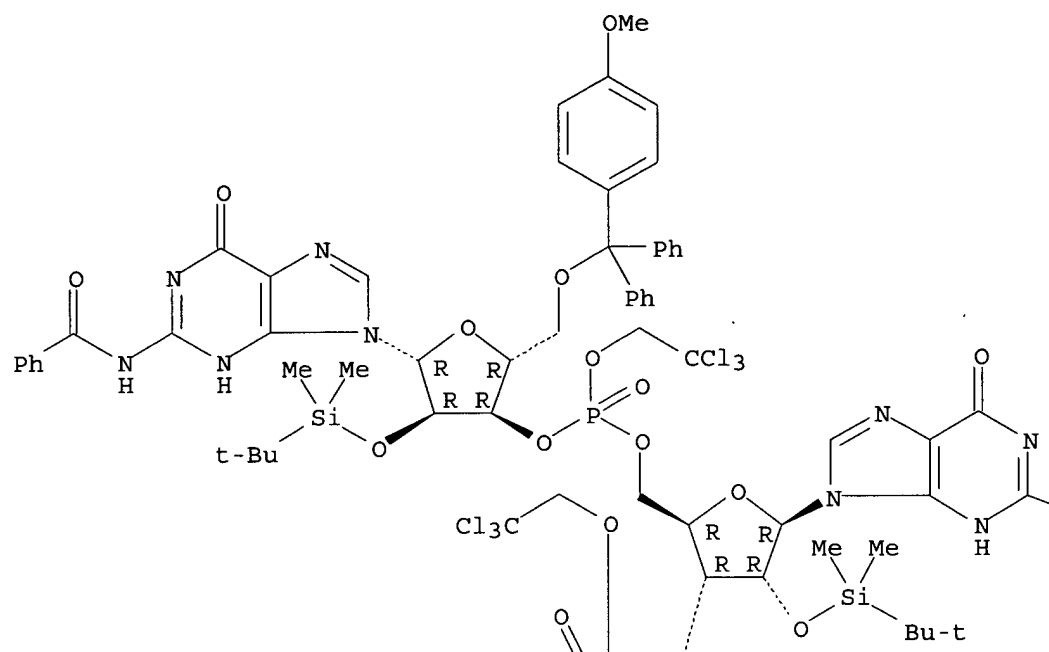


RN 72447-17-7 HCAPLUS

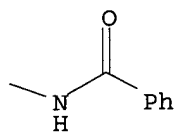
CN Cytidine, N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]-5'-O-[(4-methoxyphenyl)diphenylmethyl]-P-(2,2,2-trichloroethyl)guanylyl-(3'→5')-N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]-P-(2,2,2-trichloroethyl)guanylyl-(3'→5')-N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]-P-(2,2,2-trichloroethyl)cytidyl-(3'→5')-N-benzoyl-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

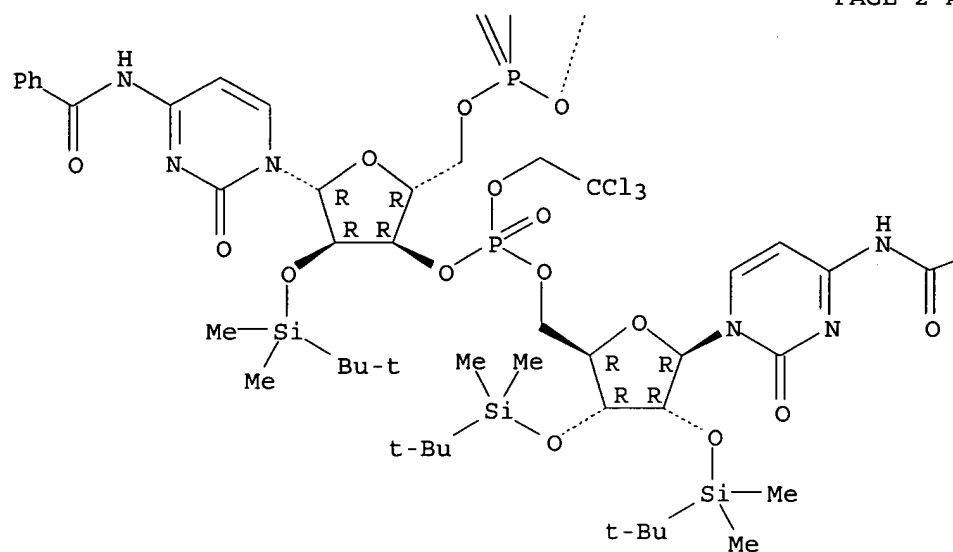
PAGE 1-A



PAGE 1-B



PAGE 2-A

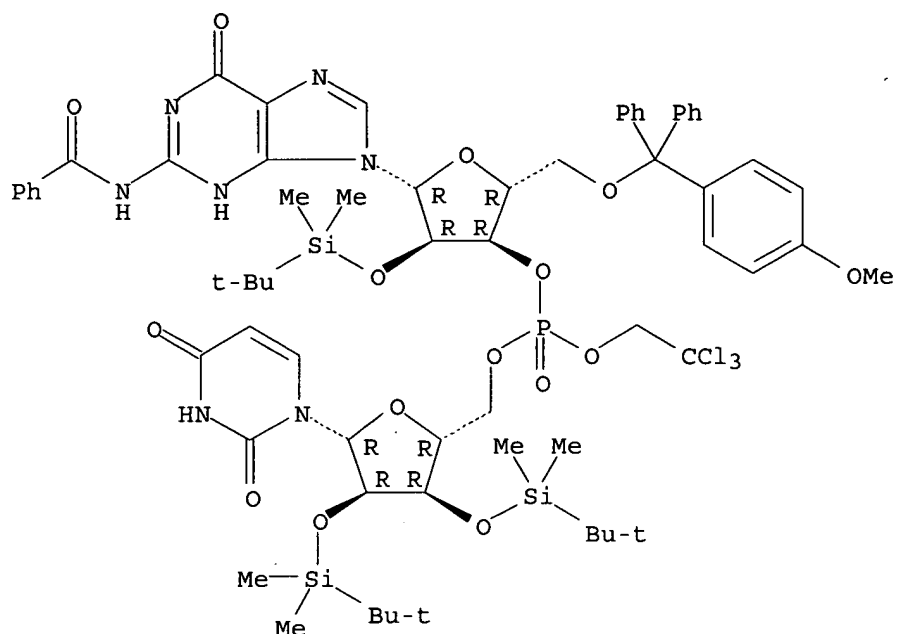


PAGE 2-B

— Ph

RN 72467-83-5 HCAPLUS
 CN Uridine, N-benzoyl-3'-O-[(1,1-dimethylethyl)dimethylsilyl]-5'-O-[(4-methoxyphenyl)diphenylmethyl]-P-(2,2,2-trichloroethyl)guanylyl-(2'→5')-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

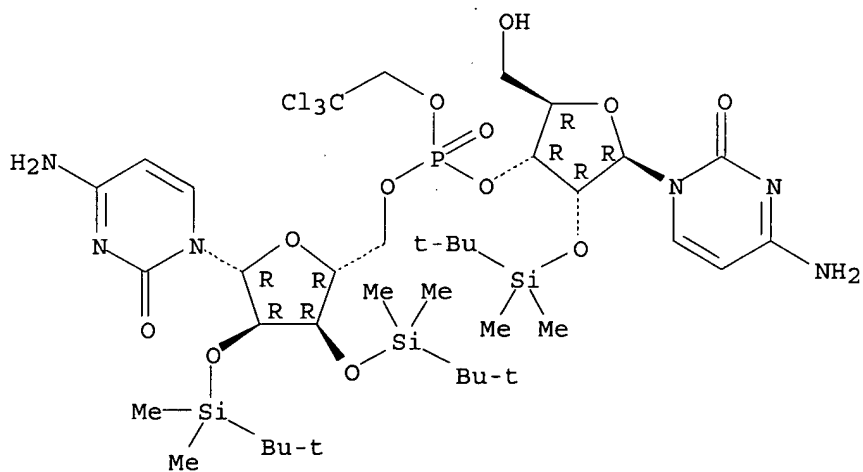
Absolute stereochemistry.



RN 72447-18-8 HCAPLUS

CN Cytidine, 2'-O-[(1,1-dimethylethyl)dimethylsilyl]-P-(2,2,2-trichloroethyl)cytidyl-(3'→5')-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

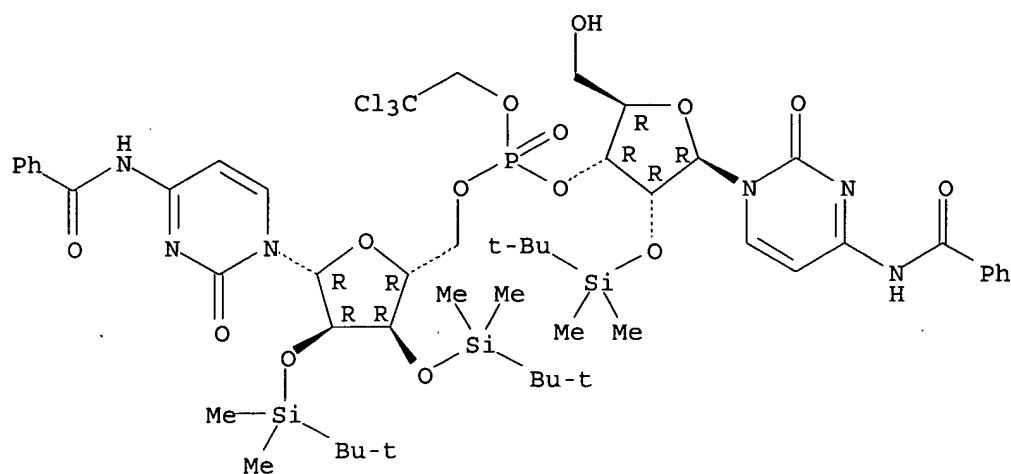
Absolute stereochemistry.



RN 72447-19-9 HCAPLUS

CN Cytidine, N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]-P-(2,2,2-trichloroethyl)cytidyl-(3'→5')-N-benzoyl-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

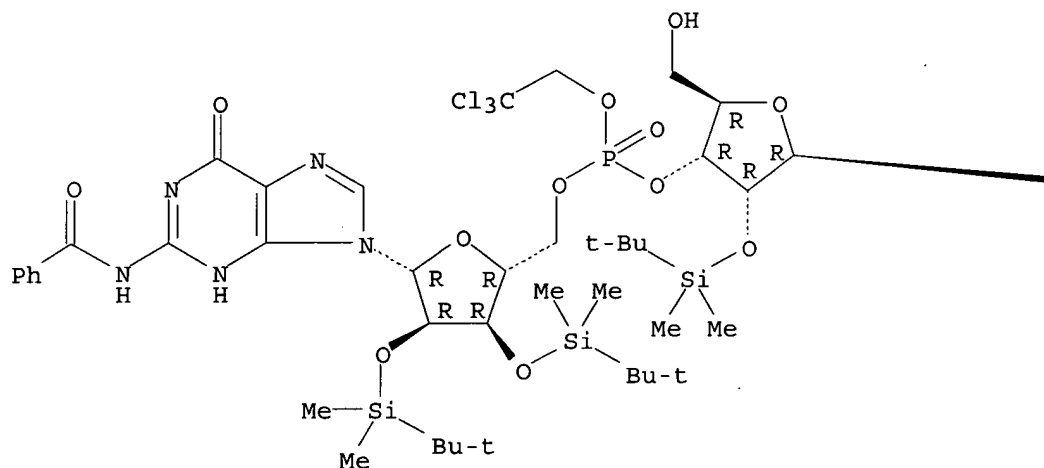


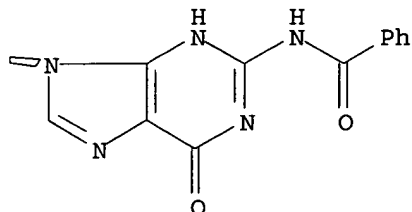
RN 72447-20-2 HCAPLUS

CN Guanosine, N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]-P-(2,2,2-trichloroethyl)guanylyl-(3'→5')-N-benzoyl-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

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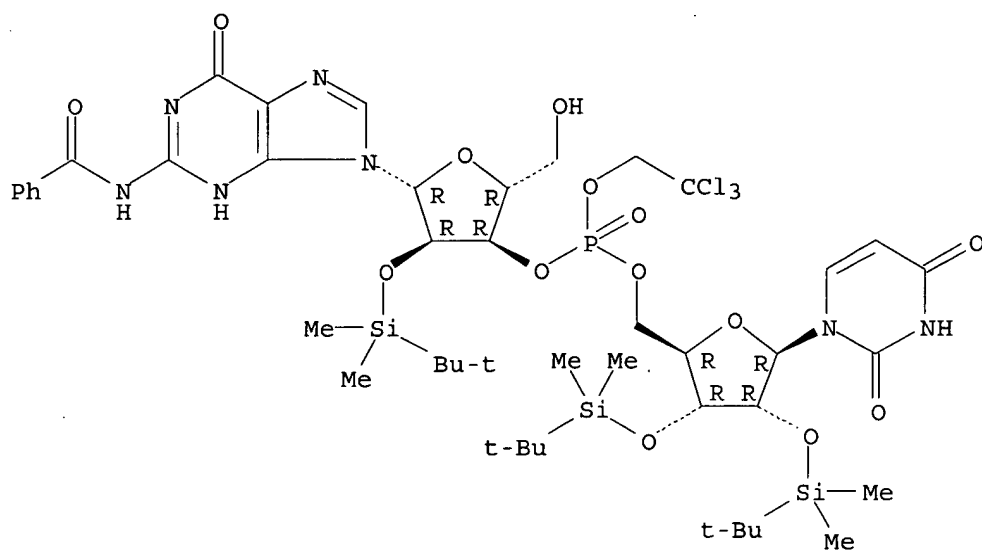




RN 72447-21-3 HCAPLUS

CN Uridine, N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]-P-(2,2,2-trichloroethyl)guanylyl-(3'→5')-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

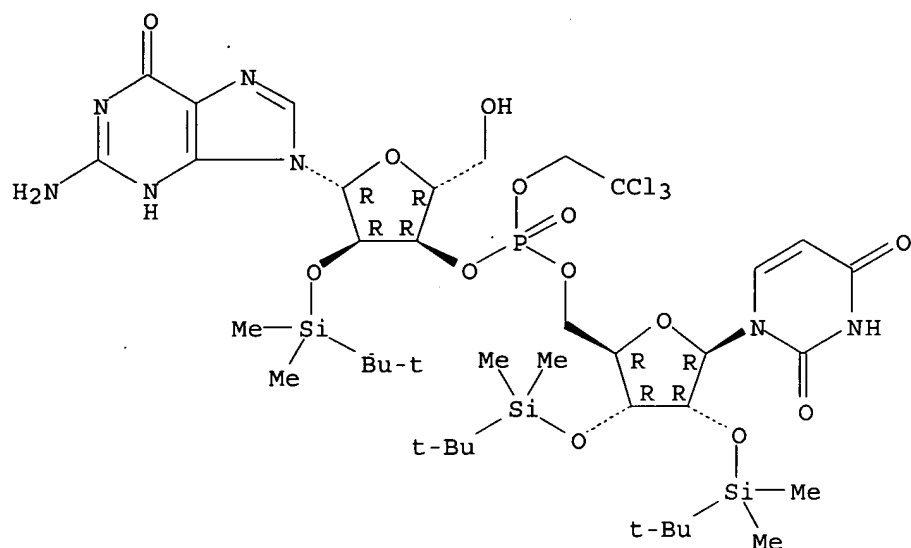
Absolute stereochemistry.



RN 72447-22-4 HCAPLUS

CN Uridine, 2'-O-[(1,1-dimethylethyl)dimethylsilyl]-P-(2,2,2-trichloroethyl)guanylyl-(3'→5')-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

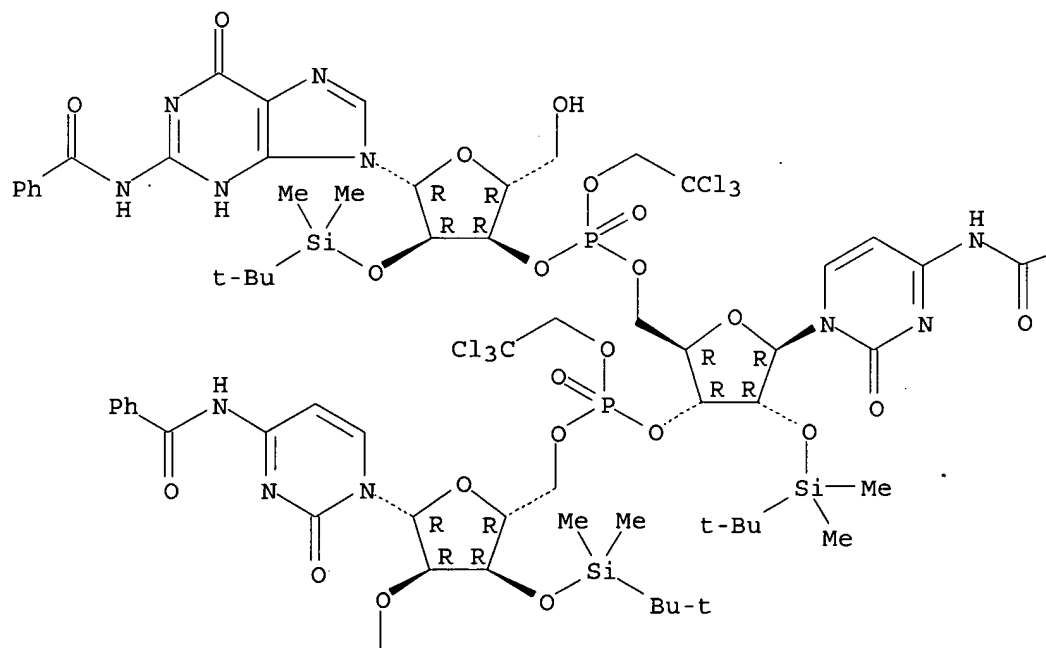


RN 72467-82-4 HCAPLUS

CN Cytidine, N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]-P-(2,2,2-trichloroethyl)guanylyl-(3'→5')-N-benzoyl-2',3'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]-P-(2,2,2-trichloroethyl)cytidylyl-(3'→5')-N-benzoyl-2'-O-[(1,1-dimethylethyl)dimethylsilyl]- (9CI)
(CA INDEX NAME)

Absolute stereochemistry.

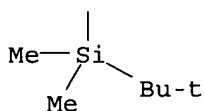
PAGE 1-A



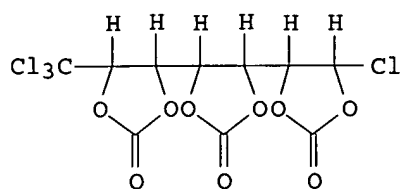
PAGE 1-B

— Ph

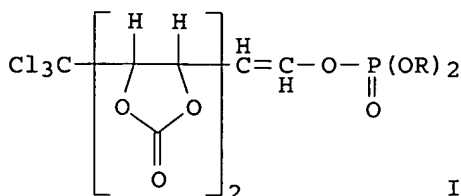
PAGE 2-A



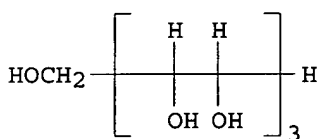
L7 ANSWER 27 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1978:597832 HCAPLUS
DOCUMENT NUMBER: 89:197832
TITLE: Studies on telomers and oligomers of vinylene
carbonate. Part XII. Telomers (n = 3) of vinylene
carbonate with tetrachloromethane as novel synthetic
intermediates for aldo-heptoses and -octoses
AUTHOR(S): Nii, Yasushi; Kunieda, Takehisa; Takizawa, Takeo
CORPORATE SOURCE: Fac. Pharm. Sci., Univ. Tokyo, Tokyo, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1978), 26(7),
1999-2006
CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



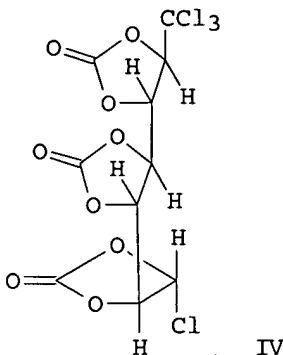
I



II



III



IV

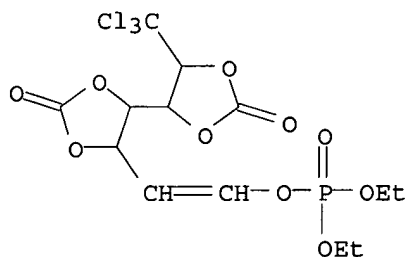
AB The stereochem. of the 4 isomers of telomer I, prepared by free-radical telomerization of vinylene carbonate with CCl_4 , was established as all-trans addition forms, based on their conversions to the enol phosphates II ($\text{R} = \text{Me}, \text{Et}$) and heptitols III. Synthetic potential of the telomers for aldoheptoses and aldooctoses was shown by transforming the telomer IV into racemic D-glycero-L-gulo- and D-glycero-D-ido-heptoses and D-threo-D-ido-octose.

IT 61040-05-9P 61091-62-1P 68108-36-1P
68108-45-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

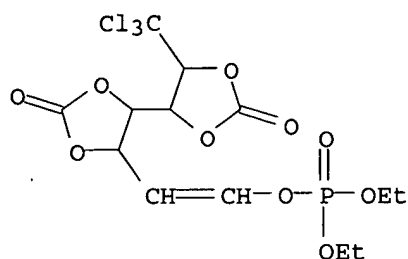
RN 61040-05-9 HCAPLUS

CN L-ido-Hept-1-enitol, 7,7,7-trichloro-2,7-dideoxy-, cyclic
3,4:5,6-bis(carbonate) 1-(diethyl phosphate), (E)- (9CI) (CA INDEX NAME)

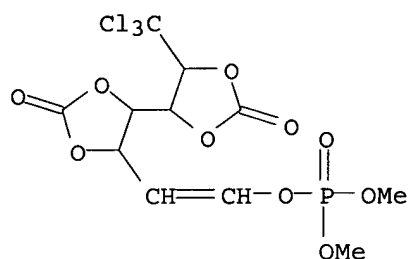


RN 61091-62-1 HCAPLUS

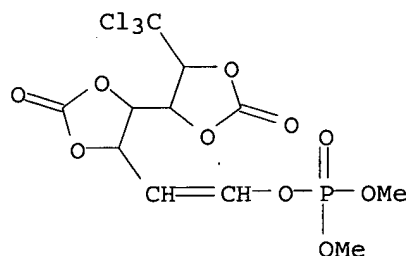
CN D-galacto-Hept-6-enitol, 1,1,1-trichloro-1,6-dideoxy-, cyclic
2,3:4,5-bis(carbonate) 7-(diethyl phosphate) (9CI) (CA INDEX NAME)



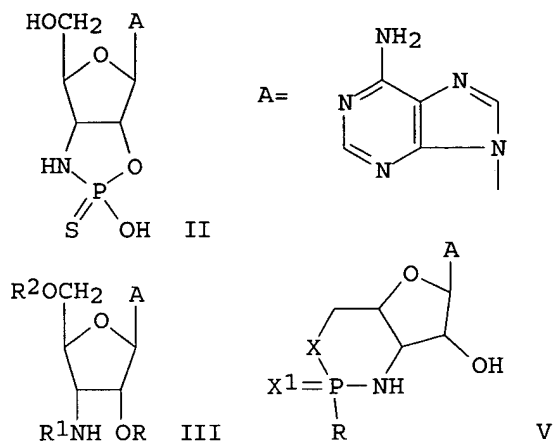
RN 68108-36-1 HCAPLUS
 CN galacto-Hept-1-enitol, 7,7,7-trichloro-2,7-dideoxy-, cyclic
 3,4:5,6-bis(carbonate) 1-(dimethyl phosphate), (E)- (9CI) (CA INDEX NAME)



RN 68108-45-2 HCAPLUS
 CN ido-Hept-1-enitol, 7,7,7-trichloro-2,7-dideoxy-, cyclic
 3,4:5,6-bis(carbonate) 1-(dimethyl phosphate), (E)- (9CI) (CA INDEX NAME)



L7 ANSWER 28 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1978:510235 HCAPLUS
 DOCUMENT NUMBER: 89:110235
 TITLE: Reactions of aminonucleosides with thiophosphorylating reagents
 AUTHOR(S): Morr, Michael; Ernst, Ludger
 CORPORATE SOURCE: Ges. Biotechnol. Forsch. m.b.H., Braunschweig-Stoeckheim, Fed. Rep. Ger.
 SOURCE: Chemische Berichte (1978), 111(6), 2152-72
 CODEN: CHBEAM; ISSN: 0009-2940
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 GI



AB The treatment of 3'-amino-3'-deoxyadenosine (I) with $\text{PSCl}_3\text{-OP(OEt)}_3$ gave II and III [$\text{R} = \text{R}_2 = \text{H}$, $\text{R}_1 = \text{EtOP(O)(OH)}$]. Similarly, 3'-tert-butoxycarbonylamino-3'-deoxyadenosine (IV) gave V ($\text{X} = \text{O}$, $\text{X}_1 = \text{S}$, $\text{R} = \text{OH}$) (VI), III [$\text{R} = \text{R}_1 = \text{H}$, $\text{R}_2 = (\text{HO})_2\text{P(S)}$] (VII) and 3'-amino-5'-chloro-3',5'-dideoxyadenosine. Treatment of I and IV with $\text{ClP(S)(OC}_6\text{H}_4\text{NO}_2\text{-4)}_2$ gave III [$\text{R} = \text{R}_2 = \text{H}$, $\text{R}_1 = \text{MeOP(S)(OH)}$] (VIII) and III [$\text{R} = \text{H}$, $\text{R}_1 = \text{Me}_3\text{COC(O)}$, $\text{R}_2 = (4\text{-O}_2\text{NC}_6\text{H}_4\text{O})_2\text{P(S)}$], resp. Reaction of 3',5'-diamino-3',5'-dideoxyadenosine and PSCl_3 gave V ($\text{X} = \text{NH}$, $\text{X}_1 = \text{S}$, $\text{R} = \text{OH}$) (IX). Treatment of II, VI, and VIII with CH_2N_2 gave III [$\text{R} = \text{R}_2 = \text{H}$, $\text{R}_1 = \text{MeOP(O)(OH)}$]. Similarly VII gave III [$\text{R} = \text{R}_1 = \text{H}$, $\text{R}_2 = \text{MeSP(O)(OH)}$] and IX gave V ($\text{X} = \text{NH}$, $\text{X}_1 = \text{O}$, $\text{R} = \text{MeS}$). The structures were determined by their ^{13}C and ^{31}P NMR spectra. The P-N bonds in VI and IX are less susceptible to acidolysis than the corresponding compds. having $\text{P} = \text{O}$ groups.

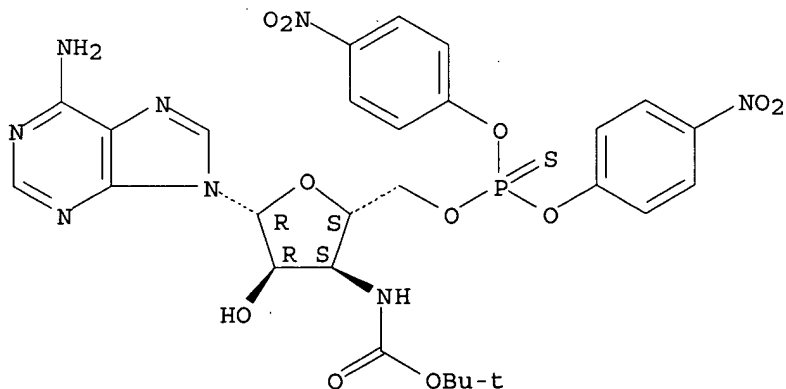
IT 67313-18-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and deblocking of)

RN 67313-18-2 HCAPLUS

CN Adenosine, 3'-deoxy-3'-[[[1,1-dimethylethoxy)carbonyl]amino]-, 5'-[bis(4-nitrophenyl) phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



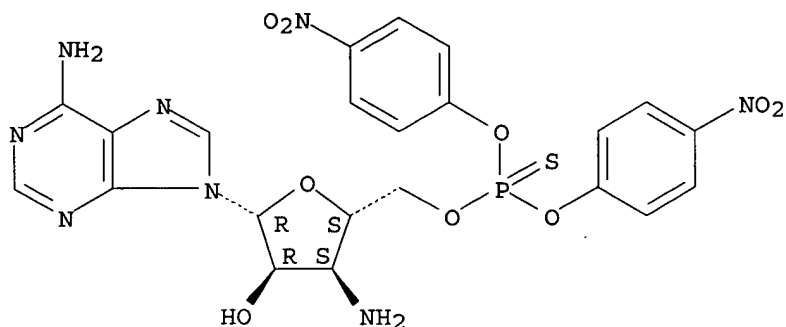
IT 67313-19-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and **methanolysis** of)

RN 67313-19-3 HCAPLUS

CN Adenosine, 2'-amino-2'-deoxy-, 5'-[bis(4-nitrophenyl) phosphorothioate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 29 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1978:6976 HCAPLUS

DOCUMENT NUMBER: 88:6976

TITLE: Reaction of phosphorus(III) halides with some ketones

AUTHOR(S): Nurtdinov, S. Kh.; Gubaidullina, R. Sh.;
Rakhimzyanova, N. S.; Sultanova, R. B.; Zykova, T. V.

CORPORATE SOURCE: USSR

SOURCE: Khimiya i Tekhnol. Elementoorgan. Soedin. i Polimerov (1976), (5), 15-19

From: Ref. Zh., Khim. 1977, Abstr. No. 13Zh384

DOCUMENT TYPE: Journal

LANGUAGE: Russian

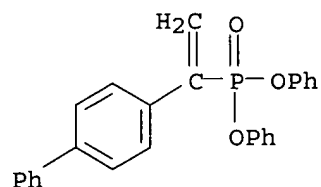
AB Title only translated.

IT 64862-41-5P 64862-42-6P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

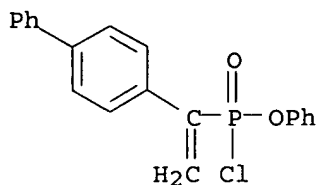
RN 64862-41-5 HCAPLUS

CN Phosphonic acid, (1-[1,1'-biphenyl]-4-ylethenyl)-, diphenyl ester (9CI)
(CA INDEX NAME)



RN 64862-42-6 HCAPLUS

CN Phosphonochloridic acid, (1-[1,1'-biphenyl]-4-ylethenyl)-, phenyl ester (9CI) (CA INDEX NAME)



L7 ANSWER 30 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1965:82885 HCAPLUS

DOCUMENT NUMBER: 62:82885

ORIGINAL REFERENCE NO.: 62:14799d-h

TITLE: Nucleic acids components and their analogs. LVII.
 Synthesis of 6-azauridine 5'-phosphate and its
 5-methyl derivative on condensation of a
 phosphorylated ribofuranosyl halide with salts of
 protected 6-azauracils

AUTHOR(S): Prystas, M.; Sorm, F.

CORPORATE SOURCE: Ceskoslov. Akad. Ved, Prague

SOURCE: Collection of Czechoslovak Chemical Communications
 (1965), 30(2), 537-46
 CODEN: CCCCCAK; ISSN: 0010-0765

DOCUMENT TYPE: Journal

LANGUAGE: English

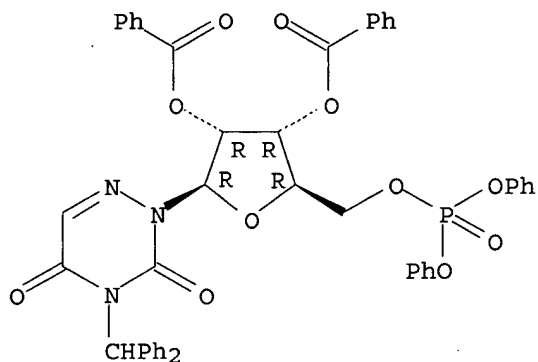
OTHER SOURCE(S): CASREACT 62:82885

AB cf. *ibid.* 81-9, 90-8; CA 62, 6547d. 6-Aza-3-diphenylmethyluracil Hg salt (456 mg.) and 2,3-di-O-benzoyl-5-O-diphenylphosphoryl-D-ribofuranosyl bromide (Ia) (from 1.2 millimoles Me riboside) (CA 58, 1459e; Ukita and Hayatsu, CA 57, 9930g) in 35 ml. xylene was refluxed 80 min. to give 85 mg. oily 6-aza(2,3-di-O-benzoyl-5-O-diphenylphosphoryl- β -D-ribofuranosyl)-3-diphenylmethyl-1-uracil, yielding, on hydrogenolysis over 10% Pd/C at 50° for 10 hrs., 71% 6-aza-1-(2,3-di-O-benzoyl-5-O-diphenylphosphoryl- β -D-ribofuranosyl)uracil (I), m. 192-3° (EtOH), $[\alpha]_D^{20}$ -50.0° (c 0.094, CHCl₃), identical with the product obtained in 42% yield by benzylation of 6-azauridine 5'-(diphenyl phosphate) (II). II was obtained in 17.5-mg. yield when 34.3 mg. I in 5 ml. 0.016M MeONa-MeOH was kept 6 hrs. and neutralized with Dowex 50 W(H⁺). Hydrogenolysis of 68.6 mg. I in MeOH over 50 mg. PtO₂ for 5 hrs. afforded 24.5 mg. 6-azauridine 5'-(phenyl phosphate) (III), while hydrogenolysis of II and III over PtO₂ at 50° for 12 and 8 hrs., resp., gave in both cases 6-azauridine 5'-phosphate, isolated as the Ba salt, along with a by-product identified as 6-aza-5,6-dihydrouridine 5'-phosphate. 6-Aza-5-methyluridine 5'-phosphate (IV) was obtained analogously. Thus, 6-aza-5-methyl-3-diphenylmethyluracil Hg salt (785 mg.) was refluxed 1 hr. with Ia (from 2 millimoles Me riboside) and the product chromatographed repeatedly over (2,3-di-O-benzoyl-5-O-diphenylphosphoryl- β -D-ribofuranosyl)-Al₂O₃ in various solvent systems to give 156 mg. oily 6-aza-5-methyl-3-diphenylmethyluracil (V), yielding on partial hydrogenolysis over 10% Pd/C for 8 hrs. at 45° 85% 6-aza-1-(2,3-di-O-benzoyl-5-methyl-5-O-diphenylphosphoryl- β -D-ribofuranosyl)uracil (VI). **Alcoholysis** of 17.5 mg. VI 3 hrs. in 1.5 ml. 0.02M MeONa-MeOH gave 10 mg. 6-aza-5-methyluridine 5'-(diphenyl phosphate). Hydrogenolysis of 70 mg. VI over 420 mg. PtO₂ in EtOH 20 hrs. gave 6-aza-2',3'-di-O-hexabydro-benzoyl-5-methyluridine 5'-phosphate, yielding, on **methanolysis** as above, IV, isolated as the Ba and dicyclohexylammonium salts. IV was also obtained in 40-mg. yield by total hydrogenolysis of 87 mg. V. The structure and β -D-configuration on

the C-1 atom of the sugar moiety of IV was proved by enzymic dephosphorylation by calf intestine alkaline phosphatase in Tris buffer and 0.005M MgSO₄ solution, yielding 6-aza-5-methyluridine. The described procedures suggest general applicability for the synthesis of 6-aza-1-glycosyluracils, especially of nucleotides derived from 5-substituted 6-azauracils, since no hydrogenation of the 6-azauracil ring occurs on hydrogenolysis.

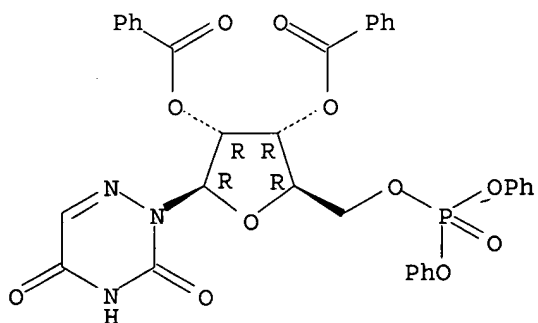
- IT 2672-67-5, as-Triazine-3,5(2H,4H)-dione, 4-(diphenylmethyl)-2- β -D-ribofuranosyl-, 2',3'-dibenzoate 5'-(di-Ph phosphate)
 2672-68-6, as-Triazine-3,5(2H,4H)-dione, 2- β -D-ribofuranosyl-, 2',3'-dibenzoate 5'-(di-Ph phosphate) 2672-71-1,
 as-Triazine-3,5(2H,4H)-dione, 4-(diphenylmethyl)-6-methyl-2- β -D-ribofuranosyl-, 2',3'-dibenzoate 5'-(di-Ph phosphate) 2672-72-2,
 as-Triazine-3,5(2H,4H)-dione, 6-methyl-2- β -D-ribofuranosyl-, 2',3'-dibenzoate 5'-(di-Ph phosphate) 2672-73-3,
 as-Triazine-3,5(2H,4H)-dione, 6-methyl-2- β -D-ribofuranosyl-, 5'-(diphenyl phosphate) 100733-26-4, as-Triazine-3,5(2H,4H)-dione, 2- β -D-ribofuranosyl-, 5'-(dipentyl phosphate)
 (preparation of)
 RN 2672-67-5 HCAPLUS
 CN as-Triazine-3,5(2H,4H)-dione, 4-(diphenylmethyl)-2- β -D-ribofuranosyl-, 2',3'-dibenzoate 5'-(diphenyl phosphate) (7CI, 8CI) (CA INDEX NAME)

Absolute stereochemistry.



- RN 2672-68-6 HCAPLUS
 CN 1,2,4-Triazine-3,5(2H,4H)-dione, 2-[2,3-di-O-benzoyl-5-O-(diphenoxyphosphinyl)- β -D-ribofuranosyl]- (9CI) (CA INDEX NAME)

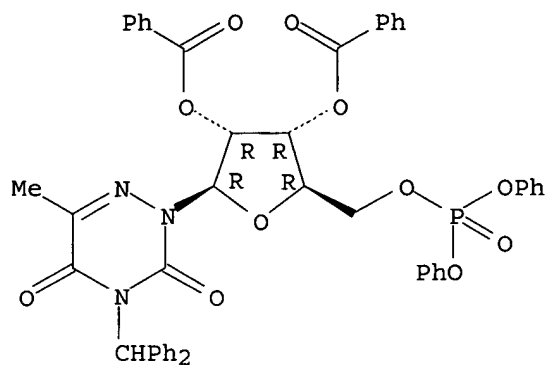
Absolute stereochemistry.



- RN 2672-71-1 HCAPLUS

CN as-Triazine-3,5(2H,4H)-dione, 4-(diphenylmethyl)-6-methyl-2-β-D-ribofuranosyl-, 2',3'-dibenzoate 5'-(diphenyl phosphate) (7CI, 8CI) (CA INDEX NAME)

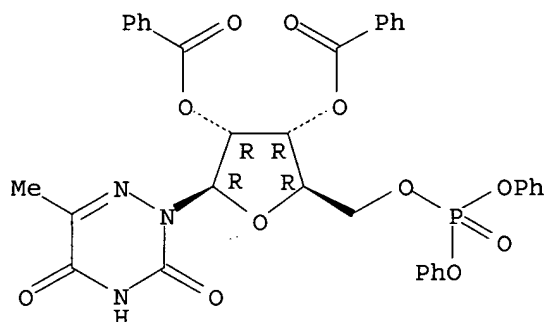
Absolute stereochemistry.



RN 2672-72-2 HCAPLUS

CN as-Triazine-3,5(2H,4h)-dione, 6-methyl-2-β-D-ribofuranosyl-, 2',3'-dibenzoate 5'-(diphenyl phosphate) (7CI, 8CI) (CA INDEX NAME)

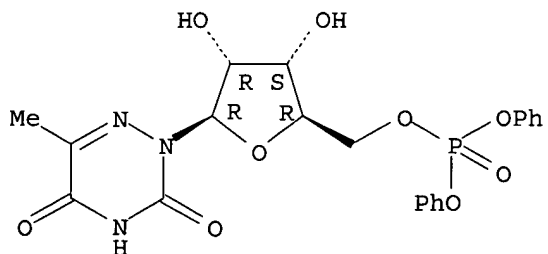
Absolute stereochemistry.



RN 2672-73-3 HCAPLUS

CN as-Triazine-3,5(2H,4H)-dione, 6-methyl-2-β-D-ribofuranosyl-, 5'-(diphenyl phosphate) (7CI, 8CI) (CA INDEX NAME)

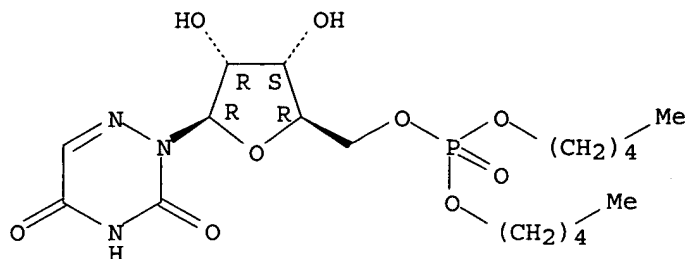
Absolute stereochemistry.



RN 100733-26-4 HCAPLUS

CN as-Triazine-3,5(2H,4H)-dione, 2-β-D-ribofuranosyl-, 5'-(dipentyl phosphate) (7CI) (CA INDEX NAME)

Absolute stereochemistry.



L7 ANSWER 31 OF 31 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1963:448639 HCAPLUS

DOCUMENT NUMBER: 59:48639

ORIGINAL REFERENCE NO.: 59:8844d-f

TITLE: Phosphorylation of glycerol and its derivatives by **alcoholysis** of amides of dialkylphosphinous acids. A new method of directed replacement of the hydroxy by a cyano group

AUTHOR(S): Petrov, K. A.; Nifant'ev, E. E.; Khorkhoyanu, L. V.

SOURCE: Zhurnal Obshchei Khimii (1962), 32, 3720-3

CODEN: ZOKHA4; ISSN: 0044-460X

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 59:48639

AB Slow distillation of Et₂NH front 10 g. 1,2-O-isopropylideneglycerol and 21.5 g. Pr₂PNET₂ under N at 120-5° gave 98% 2,3-O-isopropylideneglycerol (dipropyl phosphinite) (I), b₇ 125-6°, n_{20D} 1.4520. Similar reaction of O-benzylideneglycerol gave the corresponding dipropyl phosphinite, b_{0.001} 190-5° (bath temperature), which, treated with O at 20°, gave the corresponding phosphinate, n_{20D} 1.5179. Similarly, glycerol and excess Pr₂PNET₂ at 135-40° gave 60% glycerol tris(dipropyl phosphinite), b_{0.001} 157-62° (bath temperature), n_{20D} 1.4772, d₂₀ 0.9720, which is easily oxidized by air. Adding Pr₂POPr to BuSCN (exothermic) at 0° under N and heating 1 hr. at 100-10° gave 50% EtCN and Pr₂P(O)SBu, b₈ 131-3°, 1.4630, 0.9743. Similarly, I and PhSCN gave 45% 1,2-O-isopropylideneglycerol 3-cyanohydrin (II), b₂ 75-6°, 1.4568, 1.1070. This was added rapidly to a solution of SnCl₂ in Et₂O, saturated with dry HCl, and refluxed 1 hr.; after an aqueous treatment on the following day the mixture was neutralized, heated 5 hrs. to 50°, freed of Sn hydroxide precipitate, evaporated, and extracted with Et₂O, after which the extract with

p-O₂NC₆H₄NHNH₂ gave

2-deoxy-O-isopropylidenetetrose p-nitrophenylhydrazone, m. 1024.5°.

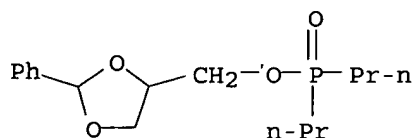
II and LiAlH₄ in Et₂O gave 4-amino-3,4-deoxy-O-isopropylidenetetritol, isolated as the picrolonate, m. 124-6°.

IT 90117-38-7, Phosphinic acid, dipropyl-, (2-phenyl-1,3-dioxolan-4-yl)methyl ester

(preparation of)

RN 90117-38-7 HCAPLUS

CN Phosphinic acid, dipropyl-, (2-phenyl-1,3-dioxolan-4-yl)methyl ester (7CI)
(CA INDEX NAME)



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L6 15230 SEA FILE=HCAPLUS ABB=ON PLU=ON (ALCOHOLYSIS/CV OR METHANOLYSI
S/CV OR "METHANOLYSIS CATALYSTS"/CV OR "METHANOLYSIS KINETICS"/
CV) OR ALCOHOLYSIS OR METHANOLYSIS
L8 565 SEA FILE=REGISTRY ABB=ON PLU=ON PESTICIDE OR INSECTICIDE OR
PARAOXON OR G(2A)AGENT OR VX
L9 803238 SEA FILE=HCAPLUS ABB=ON PLU=ON L8 OR ORGANOPHOS? OR PESTICIDE
OR INSECTICIDE OR PARAOXON OR G(2A)AGENT OR VX
L10 102 SEA FILE=HCAPLUS ABB=ON PLU=ON L9(L)L6
L11 273979 SEA FILE=REGISTRY ABB=ON PLU=ON LANTH? OR CU2? OR COOPER OR
ZINC OR YTTRIUM OR SCANDIUM OR ZN2? OR LA3?
L12 214880 SEA FILE=REGISTRY ABB=ON PLU=ON PT2? OR PLATINUM OR PALLADIUM
OR PD2?
L13 1455555 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 OR L12 OR LANTH? OR CU2?
OR COOPER OR PT2? OR PLATINUM OR PALLADIUM OR ZINC OR YTTRIUM
OR SCANDIUM OR PD2? OR ZN2? OR LA3?
L16 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L10 AND L13

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=> d ibib abs hitstr l16 1-17

L16 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:596275 HCAPLUS
DOCUMENT NUMBER: 143:97100
TITLE: Process for the preparation of dimethyl carbonate by
alcoholysis of urea
INVENTOR(S): Sun, Yuhan; Wei, Wei; Wang, Mouhua; Zhao, Ning; Yang,
Jinhai; Wang, Xiuzhi
PATENT ASSIGNEE(S): Institute of Coal Chemistry, Chinese Academy of
Sciences, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| CN 1421430 | A | 20030604 | CN 2002-155479 | 20021216 |
| PRIORITY APPLN. INFO.: | | | CN 2002-155479 | 20021216 |

AB Di-Me carbonate is prepared by alcoholysis of urea with methanol in the
presence of catalyst at 70-200° and 0.1-10 MPa. The catalyst is
oxide of Ca, Zn, Pb, K, Al, Mg, Cr, Mn, Fe, and/or Na, and its carrier is
activated C, Al₂O₃, SiO₂, or mol. sieve.
IT 1314-13-2, Zinc oxide, uses 7631-86-9, Silica,
uses

RL: CAT (Catalyst use); USES (Uses)
(preparation of di-Me carbonate by alcoholysis of urea)

RN 1314-13-2 HCAPLUS

CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O=Zn

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L16 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:521782 HCAPLUS

DOCUMENT NUMBER: 143:26725

TITLE: Improved process for preparation of
ω-haloalkyl-substituted dialkylalkoxysilanes by
controlled alcoholysis in inert organic solvents

PATENT ASSIGNEE(S): Rhodia Chimie, Fr.

SOURCE: Fr. Demande, 33 pp.

CODEN: FRXXBL

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|---|----------|-----------------|----------|
| FR 2863614 | A1 | 20050617 | FR 2003-14579 | 20031212 |
| WO 2005058922 | A2 | 20050630 | WO 2004-FR3185 | 20041210 |
| W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, | | | |
| RW: | BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |

PRIORITY APPLN. INFO.: FR 2003-14579 A 20031212

AB Alkoxysilanes (R1O)R2R3Si(CH2)3X [3, R1 = C1-15 (un)branched alkyl or C2-8 alkoxyalkyl; R2, R3 = C1-6 (un)branched alkyl, Ph; X = Cl, Br, I, substituted benzenesulfonate, alkanesulfonate, carboxylate; most preferred, X = Cl], useful as intermediates in production of polysulfides (R1O)R2R3Si(CH2)3Sn(CH2)3SiR2R3(OR1) (4, n = 1.5-5, same R1-R3) (no data), were prepared by controlled (dis)continuous alcoholysis of chlorosilanes ClR2R3Si(CH2)3X with alcs. R1OH in inert (cyclo)alkane solvents, chosen from hexane, heptane, cyclohexane and their mixts. with pentane, having b.p. close to that of the alc. and applied in amts. to provide 5-30 wt% of the alc. concentration in the solution The forming hydrochloric acid, which causes

undesired side-reactions of the chlorosilane condensation, is removed from reaction by degassing during reflux of the volatile reaction components.

The polysulfides 4 may be then obtained by reaction of the haloalkylsilanes 3 with alkali metal polysulfides. In an example, ethanolysis of ClMe₂Si(CH₂)₃Cl (1.75 mol) was performed at 94° in a stirred reactor equipped with reflux column by dissoln. of the silane in 300 g of cyclohexane and addition of ethanol in a discontinuous manner in two portions (73.4 and 26.6% of the total amount of 2.63 mol; during 40 and 30 min, resp.), each followed by a reflux periods of 1 and 1.5 h, resp.; the basic work-up included addition of 0.5 g of gaseous NH₃ and distillation, affording

(EtO)Me₂Si(CH₂)₃Cl in 97% yield with 100% conversion of the chlorosilane.

IT 7440-05-3D, Palladium, compds. 7440-06-4D, Platinum, compds.

RL: CAT (Catalyst use); USES (Uses)

(hydrosilylation catalyst; improved process of preparation of alkoxy- ω -haloalkylsilanes by controlled alcoholysis of chlorosilanes in hydrocarbon solvents with continuous removal of hydrogen chloride)

RN 7440-05-3 HCAPLUS

CN Palladium (8CI, 9CI) (CA INDEX NAME)

Pd

RN 7440-06-4 HCAPLUS

CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

IT 7631-86-9, Silica, miscellaneous

RL: MSC (Miscellaneous)

(improved process of preparation of alkoxy- ω -haloalkylsilanes by controlled alcoholysis of chlorosilanes in hydrocarbon solvents with continuous removal of hydrogen chloride)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:337782 HCAPLUS

DOCUMENT NUMBER: 143:26066

TITLE: 2004 Bader award lecture metal-ion-catalyzed acyl and phosphoryl transfer reactions to alcohols: La₃ +-promoted alcoholysis of activated amides, carboxylate esters, and neutral organophosphorus esters

AUTHOR(S): Brown, R. Stan; Neverov, Alexei A.; Tsang, Josephine S. W.; Gibson, Graham T. T.; Montoya-Pelaez, Pedro J.

CORPORATE SOURCE: Department of Chemistry, Queen's University, Kingston, ON, K7L 3N6, Can.

SOURCE: Canadian Journal of Chemistry (2004), 82(12), 1791-1805

CODEN: CJCHAG; ISSN: 0008-4042

PUBLISHER: National Research Council of Canada

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review. Unlike metal-ion-catalyzed hydrolysis processes, metal-ion-catalyzed **methanolysis** processes have received scant attention in the literature particularly from the standpoint of mechanistic studies. **La3+**, introduced into methanol solution as its triflate or perchlorate salt, is particularly effective in promoting **methanolysis** reactions of unactivated and activated esters, phosphate triesters, and activated amides such as acetyl imidazoles and lactams. Studies of the kinetics of **methanolysis** of these substrates as a function of solution pH and [La3+] indicate that the solution comprises **lanthanum** dimers with one to five associated methoxides (La23+(-OCH3)1-5), the most catalytically active form being La23+(-OCH3)2, which is produced at near neutral pH in methanol (8.4). Mechanisms for all the acyl and phosphoryl transfer reactions are proposed where the metal ion serves a dual role of acting as a Lewis acid to activate the C=O or P=O system to nucleophilic attack by a metal-coordinated methoxide nucleophile. In cases where direct comparisons can be made, the La23+ catalyst system is more active for the **methanolysis** of nonactivated substrates than for activated substrates. Another general characteristic of this system is that the catalytic rate constant for the metal complex exceeds the second-order rate constant for free methoxide, in some cases by as much as 4600-fold. Overall the catalytic effects exhibited by the La23+ system is spectacular for such substrates as **paraoxon**, where as little as 2 mmol L⁻¹ La(OTf)3 in the presence of equimolar NaOCH3 accelerates the **methanolysis** by 109-fold relative to the background reaction at neutral pH and ambient temperature

IT 16096-89-2, **Lanthanum**(III), uses
 RL: CAT (Catalyst use); USES (Uses)
 (La3+-promoted **alcoholysis** of activated amides, carboxylate esters, and neutral **organophosphorus** esters)

RN 16096-89-2 HCAPLUS

CN Lanthanum, ion (La3+) (8CI, 9CI) (CA INDEX NAME)

La³⁺

REFERENCE COUNT: 101 THERE ARE 101 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:314641 HCAPLUS

DOCUMENT NUMBER: 143:26136

TITLE: Mechanistic studies of **La3+**- and **Zn2** +-catalyzed methanolysis of aryl phosphate and phosphorothioate triesters. Development of artificial phosphotriesterase systems

AUTHOR(S): Liu, Tony; Neverov, Alexei A.; Tsang, Josephine S. W.; Brown, R. Stan

CORPORATE SOURCE: Department of Chemistry, Queen's University, Kingston, ON, K7L 3N6, Can.

SOURCE: Organic & Biomolecular Chemistry (2005), 3(8), 1525-1533

CODEN: OBCRAK; ISSN: 1477-0520

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The methanolyses of a series of O,O-di-Et O-aryl phosphates (2,5) and O,O-di-Et S-aryl phosphorothioates (6) promoted by methoxide and two metal ion systems, (La³⁺)₂(-OCH₃)₂ and 4:Zn²⁺:-OCH₃ (4 = 1,5,9-triazacyclododecane) has been studied in methanol at 25 °C. Bronsted plots of the log k₂ values vs. sspK_a for the phenol leaving groups give β_{lg} values of -0.70, -1.43 and -1.12 for the methanolysis of the phosphates and -0.63, -0.87 and -0.74 for the methanolysis of the phosphorothioates promoted by the methoxide, La³⁺ and Zn²⁺ systems resp. The kinetic data for the metal-catalyzed reactions are analyzed in terms of a common mechanism where there is extensive cleavage of the P-XAr bond in the rate-limiting transition state. The relevance of these findings to the mechanism of action of the phosphotriesterase enzyme is discussed.

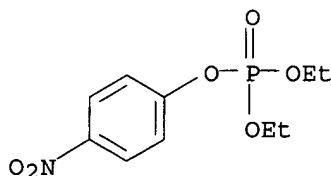
IT 7440-66-6, Zinc, uses 16096-89-2, Lanthanum (3+), uses
 RL: CAT (Catalyst use); USES (Uses)
 (lanthanum and zinc complexes catalyzed
 methanolysis of aryl phosphate and phosphorothioate triesters)
 RN 7440-66-6 HCAPLUS
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 16096-89-2 HCAPLUS
 CN Lanthanum, ion (La³⁺) (8CI, 9CI) (CA INDEX NAME)

La³⁺

IT 311-45-5, Diethyl 4-nitrophenyl phosphate
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (lanthanum and zinc complexes catalyzed
 methanolysis of aryl phosphate and phosphorothioate triesters)
 RN 311-45-5 HCAPLUS
 CN Phosphoric acid, diethyl 4-nitrophenyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 105 THERE ARE 105 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2004:1013678 HCAPLUS
 DOCUMENT NUMBER: 142:134670

TITLE: **La3+-catalyzed methanolysis of O,O-diethyl S-(p-nitrophenyl) phosphorothioate and O,O-diethyl S-phenyl phosphorothioate. Millions-fold acceleration of the destruction of V-agent simulants**

AUTHOR(S): Tsang, Josephine S. W.; Neverov, Alexei A.; Brown, R. S.

CORPORATE SOURCE: Department of Chemistry, Queen's University, Kingston, ON, K7L 3N6, Can.

SOURCE: Organic & Biomolecular Chemistry (2004), 2(23), 3457-3463
CODEN: OBCRAK; ISSN: 1477-0520

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

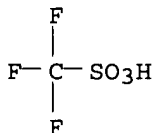
LANGUAGE: English

AB The **La3+-catalyzed methanolysis** of two phosphorothioate derivs., O,O-di-Et S-(p-nitrophenyl) phosphorothioate (4a) and O,O-di-Et S-Ph phosphorothioate (4b) was studied as a function of [La3+] and sspH in methanol solvent. In both cases the kinetics of catalyzed **methanolysis** maximize at sspH 9.1 and a detailed anal. indicates that the dominant species responsible for catalysis are dimers formulated as **La3+2(-OCH3)2** and **La3+2(-OCH3)4**. The catalysis is compared with that seen for the corresponding phosphate esters, namely **paraoxon** (3a) and O,O-di-Et Ph phosphate (3b) for which **La3+** catalysis is slightly better and markedly worse than for 4a and 4b, resp. Overall, at sspH 9.1, a 2 mmol dm-3 solution of La(OTf)3 with equimolar NaOCH3 provides accelerations of 2.2 + 108-fold, 9.7 + 106-fold, and 9.3 + 106-fold for **methanolysis** of 3a, 4a, and 4b, relative to the background reaction of methoxide reacting with the three substrates. In each case, the P-containing product of the reactions is exclusively di-Et Me phosphate. Turnover expts. with 6-fold and 100-fold excesses of 4a and 4b, resp., **methanolized** in the presence of .apprx.10 mmol dm-3 **La3+** and equimolar NaOCH3, indicate that the reactions are essentially complete within 103 s and 70 min, resp. The latter turnover experiment with 4b corresponded to 100 turnovers in 70 min and an overall reaction t1/2 of 8 min. A common mechanism of reaction is postulated for each of the substrates which involves Lewis acid coordination of one of the **La3+** to the P=O unit, followed by nucleophilic attack by the second **La3+--OCH3**.

IT **52093-26-2**, Tris(trifluoromethanesulfonato)lanthanum
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(millions-fold acceleration of the destruction of V-agent simulants via **lanthanum-catalyzed methanolysis**)

RN 52093-26-2 HCAPLUS

CN Methanesulfonic acid, trifluoro-, lanthanum(3+) salt (9CI) (CA INDEX NAME)

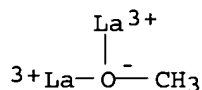


IT 565184-22-7 565184-24-9 565184-25-0
825629-26-3

RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)
(millions-fold acceleration of the destruction of V-agent simulants via lanthanum-catalyzed methanolysis)

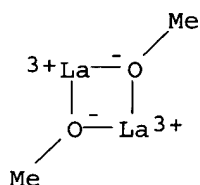
RN 565184-22-7 HCAPLUS

CN Lanthanum(5+), μ -methoxydi- (9CI) (CA INDEX NAME)



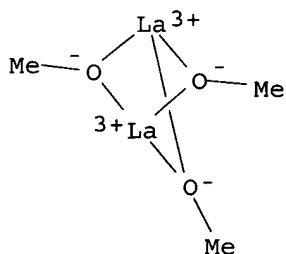
RN 565184-24-9 HCAPLUS

CN Lanthanum(4+), di- μ -methoxydi- (9CI) (CA INDEX NAME)



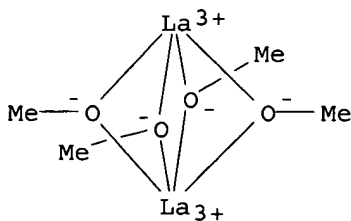
RN 565184-25-0 HCAPLUS

CN Lanthanum(3+), tri- μ -methoxydi- (9CI) (CA INDEX NAME)



RN 825629-26-3 HCAPLUS

CN Lanthanum(2+), tetra- μ -methoxydi- (9CI) (CA INDEX NAME)

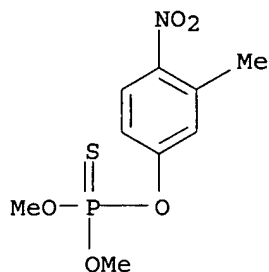


IT 122-14-5, Fenitrothion 311-45-5, Paraoxon

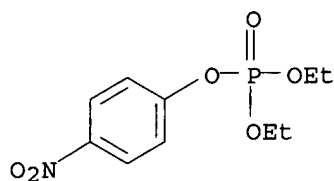
RL: CPS (Chemical process); PEP (Physical, engineering or chemical

process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (millions-fold acceleration of the destruction of V-agent simulants via **lanthanum-catalyzed methanolysis**)

RN 122-14-5 HCAPLUS
 CN Phosphorothioic acid, O,O-dimethyl O-(3-methyl-4-nitrophenyl) ester (9CI)
 (CA INDEX NAME)



RN 311-45-5 HCAPLUS
 CN Phosphoric acid, diethyl 4-nitrophenyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:769851 HCAPLUS

DOCUMENT NUMBER: 141:410584

TITLE: **Zn²⁺-Catalyzed Methanolysis of Phosphate Triesters: A Process for Catalytic Degradation of the Organophosphorus**

Pesticides Paraoxon and Fenitrothion

AUTHOR(S): Desloges, William; Neverov, Alexei A.; Brown, R. S.

CORPORATE SOURCE: Department of Chemistry, Queen's University, Kingston, ON, K7L 3N6, Can.

SOURCE: Inorganic Chemistry (2004), 43(21), 6752-6761

CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The methanolyses of two neutral phosphorus triesters, **paraoxon** (1) and fenitrothion (3), were investigated as a function of added Zn(OTf)₂ or Zn(ClO₄)₂ in methanol at 25 °C either alone or in the presence of equimolar concns. of the ligands phenanthroline (4), 2,9-dimethylphenanthroline (5), and 1,5,9-triazacyclododecane (6). The catalysis requires the presence of methoxide, and when studied as a function of added NaOCH₃, the rate consts. (k_{obs}) for **methanolysis** of Zn²⁺ alone or in the presence of equimolar 4 or 5 maximize at

different $[-\text{OCH}_3]/[\text{Zn}^{2+}]_{\text{total}}$ ratios of 0.3, 0.5, and 1.0, resp. Plots of k_{obs} vs $[\text{Zn}^{2+}]_{\text{total}}$ either alone or in the presence of equimolar ligands 4 and 5 at the $[-\text{OCH}_3]/[\text{Zn}^{2+}]_{\text{total}}$ ratios corresponding to the rate maxima are curved and show a nonlinear dependence on $[\text{Zn}^{2+}]_{\text{total}}$. In the cases of 4 and 5, this is explained as resulting from formation of a nonactive dimer, formulated as a bis- μ -methoxide-bridged form ($\text{L}:\text{Zn}^{2+}(-\text{OCH}_3)_2\text{Zn}^{2+}:\text{L}$) in equilibrium with an active monomeric form ($\text{L}:\text{Zn}^{2+}(-\text{OCH}_3)$). In the case of the $\text{Zn}^{2+}:\text{6}$ system, no dimeric forms are present as can be judged by the strict linearity of the plots of k_{obs} vs $[\text{Zn}^{2+}]_{\text{total}}$ in the presence of equimolar 6 and $-\text{OCH}_3$. Anal. of the potentiometric titration curves for Zn^{2+} alone and in the presence of the ligands allows calcn. of the speciation of the various Zn^{2+} forms and shows that the binding to ligands 4 and 6 is very strong, while the binding to ligand 5 is weaker. Overall the best catalytic system is provided by equimolar Zn^{2+} , 5, and $-\text{OCH}_3$, which exhibits excellent turnover of the **methanolysis** of **paraoxon** when the substrate is in excess. At a concentration of 2 mM in each of these components, which sets the pH of the solution at 9.5, the acceleration of the **methanolysis** of **paraoxon** and **fenitrothion** relative to the methoxide reaction is 1.8×10^6 -fold and 13×10^6 -fold, resp. A mechanism for the catalyzed reactions is proposed which involves a dual role for the metal ion as a Lewis acid and source of nucleophilic Zn^{2+} -bound $-\text{OCH}_3$.

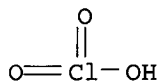
IT 10361-95-2 54010-75-2

RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); RGT (Reagent); PROC (Process); RACT (Reactant or reagent); USES (Uses)

(^{31}P NMR and potentiometric titration on Zn^{2+} -catalyzed **methanolysis** of **pesticides** phosphate triesters)

RN 10361-95-2 HCAPLUS

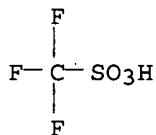
CN Chloric acid, zinc salt (9CI) (CA INDEX NAME)



● $1/2 \text{ Zn}$

RN 54010-75-2 HCAPLUS

CN Methanesulfonic acid, trifluoro-, zinc salt (9CI) (CA INDEX NAME)



● $1/2 \text{ Zn}$

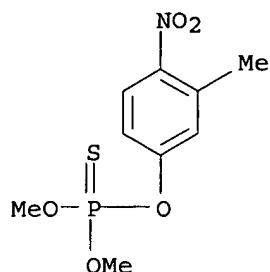
IT 122-14-5, Fenitrothion 311-45-5, **Paraoxon**

RL: CPS (Chemical process); PEP (Physical, engineering or chemical

process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (31P NMR and potentiometric titration on Zn²⁺-catalyzed
methanolysis of pesticides phosphate triesters)

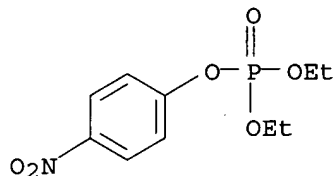
RN 122-14-5 HCAPLUS

CN Phosphorothioic acid, O,O-dimethyl O-(3-methyl-4-nitrophenyl) ester (9CI)
 (CA INDEX NAME)



RN 311-45-5 HCAPLUS

CN Phosphoric acid, diethyl 4-nitrophenyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 86 THERE ARE 86 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:601390 HCAPLUS

DOCUMENT NUMBER: 141:277703

TITLE: Cu(II)-Mediated decomposition of phosphorothionate P:S
pesticides. Billion-fold acceleration of the
methanolysis of fenitrothion promoted by a
 simple Cu(II)-ligand system

AUTHOR(S): Neverov, Alexei A.; Brown, R. Stan

CORPORATE SOURCE: Department of Chemistry, Queen's University, Kingston,
 ON, K7L 3C1, Can.

SOURCE: Organic & Biomolecular Chemistry (2004), 2(15),
 2245-2248

CODEN: OBCRAK; ISSN: 1477-0520

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The kinetics of methanolysis of the title compound fenitrothion (3) were
 studied in the presence of Cu²⁺, introduced as Cu(OTf)₂, in the
 presence of 0.5-1.0 equivalent of methoxide and in the presence of 1.0
 equivalent

of a ligand such as bipyridyl (5), phenanthroline (6) or
 1,5,9-triazacyclododecane (4). In all cases the active species involve
 Cu²⁺(-OCH₃). In the case of added strong-binding ligands 5 or 6,
 a plot of the observed rate constant for methanolysis of 3 vs. [Cu²⁺

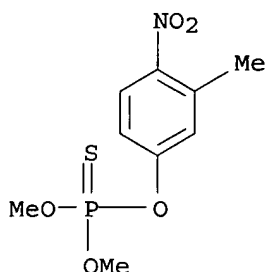
+] $_{\text{total}}$ gives a curved line modeled by a process having a $[\text{Cu}^{2+}]^{1/2}$ dependence consistent with an active monomeric species in equilibrium with an inactive dimer i.e. $\{\text{LCu}^{2+}(-\text{OCH}_3)\}_2$. In the case of the added strong binding ligand 4, the plot of the observed rate constant for methanolysis of 3 vs. $[\text{Cu}^{2+}]_{\text{total}}$ gives a straight line consistent with the catalytically active species being $4\text{Cu}^{2+}(\text{OCH}_3)$ which shows no propensity to form inactive dimers. Turnover expts. where the $[3] > [\text{Cu}^{2+}]_{\text{total}}$ indicate that the systems are truly catalytic. In the optimum case a catalytic system comprising 1 mM of the complex $4\text{Cu}^{2+}(-\text{OCH}_3)$ catalyzes the methanolysis of 3 with a $t_{1/2}$ of .apprx.58 s accounting for a 1.7×10^9 -fold acceleration relative to the background reaction at near neutral sspH (8.75).

IT 122-14-5, Fenitrothion 311-45-5, **Paraoxon**

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent) (copper-mediated decomposition of phosphorothionate **pesticides** and billion-fold acceleration of **methanolysis** of fenitrothion promoted by simple copper-ligand system)

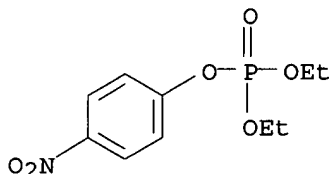
RN 122-14-5 HCAPLUS

CN Phosphorothioic acid, O,O-dimethyl O-(3-methyl-4-nitrophenyl) ester (9CI) (CA INDEX NAME)



RN 311-45-5 HCAPLUS

CN Phosphoric acid, diethyl 4-nitrophenyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:552355 HCAPLUS

DOCUMENT NUMBER: 141:367581

TITLE: Fatty acid methyl esters synthesis from triglycerides over heterogeneous catalysts in the presence of microwaves

AUTHOR(S): Mazzocchi, Carlo; Modica, Giovanni; Kaddouri, Akim; Nannicini, Roberto

CORPORATE SOURCE: Chemistry, Materials and Chemical Engineering

SOURCE: Department, Politecnico di Milano, Milan, 20133, Italy
Comptes Rendus Chimie (2004), 7(6-7), 601-605
CODEN: CRCOCR; ISSN: 1631-0748
PUBLISHER: Editions Scientifiques et Medicales Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Microwaves have proven more interesting than traditional methods for the
alcoholysis with methanol of triglycerides with heterogeneous catalysis
allowing better yields and conversions into FAMES (Fatty Acids Me Esters)
in a short time and, consequently, less energy consumption.
IT 1314-13-2, Zinc oxide, uses
RL: CAT (Catalyst use); USES (Uses)
(alumina-supported; manufacture of fatty acid Me esters from alcoholysis of
triglycerides over heterogeneous catalysts in presence of microwaves)
RN 1314-13-2 HCAPLUS
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)

O=Zn

IT 1309-37-1, Ferric oxide, uses
RL: CAT (Catalyst use); USES (Uses)
(iron potassium oxide-supported; manufacture of fatty acid Me esters from
alcoholysis of triglycerides over heterogeneous catalysts in
presence of microwaves)
RN 1309-37-1 HCAPLUS
CN Iron oxide (Fe₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:820237 HCAPLUS
DOCUMENT NUMBER: 139:272388
TITLE: A process for the preparation of glossy slow release
insecticidal paint for insect control
INVENTOR(S): Marjit, Dharendra Nath; Prakash, Shri; Kaushik,
Mahabir Prashad; Banerjee, Susanta; Saxena, Chhaya;
Mendki, Muralidhar Jaywantrao; Rao, Karumuru
Mallikarjana; Vaidyanathaswamy, Ramamoorthy; Samui,
Asit Baran; Deb, Pramila Chandra
PATENT ASSIGNEE(S): Chief Controller of Research and Development
Organization, Ministry of Defence, India; Indian
National Technical Coordination Dte.
SOURCE: Indian, 12 pp.
CODEN: INXXAP
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| IN 178869 | A | 19970705 | IN 1992-DE1244 | 19921224 |
| PRIORITY APPLN. INFO.: | | | IN 1992-DE1244 | 19921224 |

AB A process for the preparation of a glossy slow release insecticidal paint
(SRIP) for insect control comprises subjecting a long chain oil to the
step of alcoholysis with a perhydroxy compound in the presence of

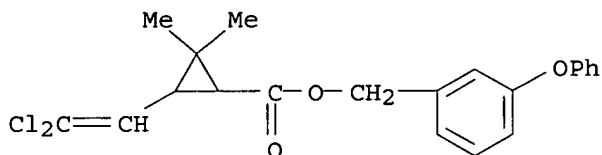
a catalyst, for example, lithium hydroxide, at the temperature of 150 to 300 °C, subjecting the resulting product to the step of polycondensation/esterification with an aromatic or aliphatic anhydride, adding to the reaction product so obtained of conventional **insecticides** in the amount of 0.5 to 1.5 parts, along with a mixture of a pigment and a curing agent.

IT 52645-53-1, Permethrin

RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(in glossy slow release insecticidal paint)

RN 52645-53-1 HCAPLUS

CN Cyclopropanecarboxylic acid, 3-(2,2-dichloroethenyl)-2,2-dimethyl-, (3-phenoxyphenyl)methyl ester (9CI) (CA INDEX NAME)

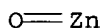


IT 1314-13-2, Zinc oxide, biological studies

RL: BUU (Biological use, unclassified); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses)
(pigment in glossy slow release insecticidal paint)

RN 1314-13-2 HCAPLUS

CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)



L16 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:404007 HCAPLUS

DOCUMENT NUMBER: 139:117483

TITLE: Billion-fold Acceleration of the **Methanolysis** of **Paraoxon** Promoted by La(OTf)₃ in Methanol

AUTHOR(S): Tsang, Josephine S.; Neverov, Alexei A.; Brown, R. S.
CORPORATE SOURCE: Department of Chemistry, Queen's University, Kingston, ON, K7L 3N6, Can.

SOURCE: Journal of the American Chemical Society (2003), 125(25), 7602-7607

CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The **methanolysis** of the insecticide **paraoxon**

(2) was investigated in methanol solution containing varying [La(OTf)₃] (OTf = -OS(O)₂CF₃) as a function of sspH at 25°. Plots of the pseudo-first-order rate consts. (k_{obs}) for **methanolysis** as a function of [La(OTf)₃]_{total} were obtained under buffered conditions from sspH 5.15 to 10.97, and the slopes of the linear parts of these were used to determine the second-order rate consts. (k_{2obs}) for the La₃ +-catalyzed **methanolysis** of 2. Detailed anal. of the potentiometric titration data of La(OTf)₃ in methanol through fits to a multicomponent equilibrium mixture of dimers of general stoichiometry La₃ +2(-OCH₃)_n, where n assumes values of 1-5, gives the equilibrium distribution

of each as a function of sspH. These data, when fit to a second expression describing k_{2obs} in terms of a linear combination of individual rate consts. $k_{22:1}$, $k_{22:2}$ $k_{22:n}$ for the dimers, allow one to describe the overall catalytic profile in terms of the individual contributions.

The most catalytically important species are the three dimers La_3

$+2(-OCH_3)_1$, $La_3+2(-OCH_3)_2$, and $La_3+2(-OCH_3)_3$. The

catalysis of the **methanolysis** of 2 is spectacular: a 2 +

10^{-3} M solution of $[La_3+]_{total}$, at neutral sspH, affords a 109-fold

acceleration relative to the base reaction ($t_{1/2} \approx 20$ s at sspH

8.2) with excellent turnover. A mechanism of the catalyzed reaction

involving the $La_3+2(-OCH_3)_2$ species is proposed.

IT 52093-26-2, Tris(trifluoromethanesulfonato)lanthanum

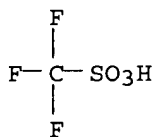
RL: CAT (Catalyst use); USES (Uses)

(billion-fold acceleration of **methanolysis** of

paraoxon promoted by lanthanum triflate in methanol)

RN 52093-26-2 HCAPLUS

CN Methanesulfonic acid, trifluoro-, lanthanum(3+) salt (9CI) (CA INDEX NAME)



●1/3 La(III)

IT 565184-22-7 565184-24-9 565184-25-0

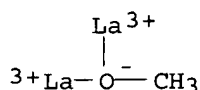
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)

(billion-fold acceleration of **methanolysis** of

paraoxon promoted by lanthanum triflate in methanol)

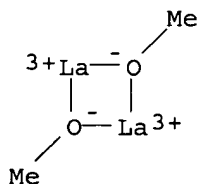
RN 565184-22-7 HCAPLUS

CN Lanthanum(5+), μ -methoxydi- (9CI) (CA INDEX NAME)

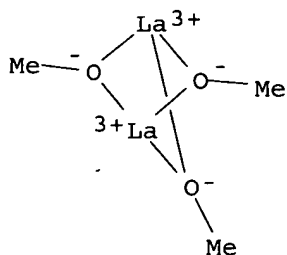


RN 565184-24-9 HCAPLUS

CN Lanthanum(4+), di- μ -methoxydi- (9CI) (CA INDEX NAME)



RN 565184-25-0 HCAPLUS

CN Lanthanum(3+), tri- μ -methoxydi- (9CI) (CA INDEX NAME)

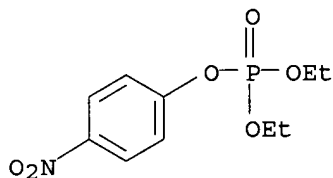
IT 311-45-5, Paraoxon

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(billion-fold acceleration of **methanolysis** of
paraoxon promoted by **lanthanum** triflate in methanol)

RN 311-45-5 HCAPLUS

CN Phosphoric acid, diethyl 4-nitrophenyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 69 THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:404533 HCAPLUS

DOCUMENT NUMBER: 135:152902

TITLE: **La3+**-Catalyzed Methanolysis of Phosphate Diesters. Remarkable Rate Acceleration of the Methanolysis of Diphenyl Phosphate, Methyl p-Nitrophenyl Phosphate, and Bis(p-nitrophenyl) Phosphate

AUTHOR(S): Neverov, Alexei A.; Brown, R. S.

CORPORATE SOURCE: Department of Chemistry, Queen's University, Kingston, ON, K7L 3N6, Can.

SOURCE: Inorganic Chemistry (2001), 40(14), 3588-3595

CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The interaction of **La3+** with di-Ph phosphate, Me p-nitrophenyl phosphate, and bis(p-nitrophenyl) phosphate (4, 5, and 3) and the ensuing catalysis of methanolysis was studied in methanol under completely homogeneous conditions of known sspH. ³¹P NMR shows that phosphates 3 and 4 are each associated with **La3+** as a rapidly interconverting mixture of complexes having 2:1, 1:1 (or 2:2), and 1:2 stoichiometry. At [**La3+**] > 2 + 10⁻⁴ M, the kinetically dominant species in the sspH regions of interest are phosphate-bound **La3+** dimers having

2-5 associated methoxides. Potentiometric titration reveals that 4 mM La^{3+} alone in MeOH exhibits two apparent sspKas at 7.86 and 10.44 consuming 1 and 1.5 CH_3O^- per metal, the suggested structures being La^{3+} dimers with first two and then five associated methoxides. In the presence of 0.5 equiv of 4 the potentiometric titration reveals strong complexation of 4 to La^{3+} and a profile with apparent sspKas at 7.8 and 11.1 consuming 1 and 1.5 CH_3O^- per metal corresponding to phosphate-bridged La^{3+} dimers with first two and then five associated methoxides. Methanolysis of 3-5 is strongly accelerated by La^{3+} . At sspH 8.9 or 11.1, resp., as little as 5×10^{-4} M $\text{La}(\text{OTf})_3$ accelerates the methanolysis of 3 or 4 by 1010-fold relative to the background reaction. Detailed kinetic studies of the methanolysis of 5 at varying $[\text{La}^{3+}]$ and sspH indicate that both La^{3+} monomers and dimers with associated methoxides are reactive species. The rate consts. for La^{3+} monomer and dimer catalysis of the methanolysis of 5 are dependent on sspH , the slopes of the log plots being 0.35 and 0.5, resp. A scheme is proposed to account for the non-first-order dependence on $[\text{CH}_3\text{O}^-]$ wherein the $\text{La}^{3+}(\text{CH}_3\text{O})_x + 5 \xrightarrow{\text{dimer}} \text{La}^{3+}(\text{CH}_3\text{O})_x:5$ and $(\text{La}^{3+})_2(\text{CH}_3\text{O})_y + 5 \xrightarrow{\text{dimer}} 5:(\text{La}^{3+})_2(\text{CH}_3\text{O})_y$ equilibrium are driven to the left with increasing nos. of associated methoxides and that attack on these complexes, whether by external or metal-associated methoxide, is slower due to the reduced net pos. charge on the complex.

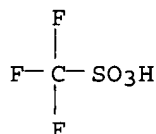
IT 52093-26-2

RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)

(kinetic study of La^{3+} -catalyzed methanolysis of di-Ph phosphate, Me p-nitrophenyl phosphate, and bis(p-nitrophenyl) phosphate)

RN 52093-26-2 HCAPLUS

CN Methanesulfonic acid, trifluoro-, lanthanum(3+) salt (9CI) (CA INDEX NAME)

● 1/3 $\text{La}(\text{III})$

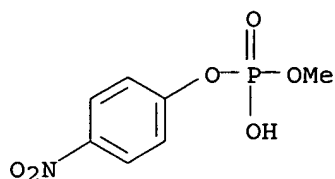
IT 15930-83-3

RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(kinetic study of La^{3+} -catalyzed methanolysis of di-Ph phosphate, Me p-nitrophenyl phosphate, and bis(p-nitrophenyl) phosphate)

RN 15930-83-3 HCAPLUS

CN Phosphoric acid, monomethyl mono(4-nitrophenyl) ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:140171 HCAPLUS

DOCUMENT NUMBER: 126:172084

TITLE: Manufacturing method of hydroxy group-terminated polyethers using composite oxide alcoholysis catalysts
INVENTOR(S): Hayashi, Bunhatsu; Chin, Ikufumi; Ko, Yukimasa; Chin, Sekiei

PATENT ASSIGNEE(S): Ind Tech Res Inst, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| JP 09003185 | A2 | 19970107 | JP 1995-153677 | 19950620 |
| PRIORITY APPLN. INFO.: | | | JP 1995-153677 | 19950620 |

AB The title polymers are prepared by alcoholysis of ester-terminated polyoxyalkylenes and alcs. in the presence of composite metal oxide catalysts (consisting of alkaline earth metal oxides and alumina, silica, zinc oxide and mixts.), and separating the produced OH-terminated polyoxyalkylene from the catalysts. A catalyst was prepared by calcination of a dried mixture of alumina and $\text{Ca}(\text{NO}_3) \cdot 4\text{H}_2\text{O}$ to give CaO and Al_2O_3 . Polytetramethylene glycol acetate was reacted with MeOH using the above catalyst to give polytetramethylene glycol.

IT 7631-86-9, Silica, uses

RL: CAT (Catalyst use); USES (Uses)

(manufacturing method of hydroxy group-terminated polyethers using composite oxide alcoholysis catalysts)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

$\text{O}=\text{Si}=\text{O}$

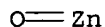
IT 1314-13-2P, Zinc oxide, preparation

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

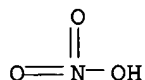
(manufacturing method of hydroxy group-terminated polyethers using composite oxide alcoholysis catalysts)

RN 1314-13-2 HCAPLUS

CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)



IT 19154-63-3, Zinc nitrate tetrahydrate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (manufacturing method of hydroxy group-terminated polyethers using composite
 oxide alcoholysis catalysts)
 RN 19154-63-3 HCAPLUS
 CN Nitric acid, zinc salt, tetrahydrate (8CI, 9CI) (CA INDEX NAME)



●2 H₂O

●1/2 Zn

L16 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:9944 HCAPLUS

DOCUMENT NUMBER: 126:89902

TITLE: Preparation of hydroxy group end-capped polyether glycols by alcoholysis using mixed metal oxide catalysts

INVENTOR(S): Lin, Wen-fa; Chen, Yu-wen; Huang, Jih-chen; Chen, Hsueh-ying

PATENT ASSIGNEE(S): Industrial Technology Research Institute, Taiwan

SOURCE: U.S., 4 pp.
 CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|------------------|----------|
| US 5585458 | A | 19961217 | US 1995-495087 | 19950627 |
| DE 19522922 | A1 | 19970102 | DE 1995-19522922 | 19950623 |
| DE 19522922 | C2 | 20000504 | | |

PRIORITY APPLN. INFO.: US 1995-495087 19950627

AB Hydroxy group end-capped polyether glycols for manufacture of thermoplastic urethanes and copolyester ethers, are prepared by alcoholysis of ester end-capped polyalkylene ether in the presence of a highly active, mixed metal oxide catalyst, containing an alkaline earth metal oxide and oxide of

Al, Si

or/and Zn, which can be fabricated into shaped articles for a slurry or a fixed bed reactor and is easily separated from product. Thus, polytetramethylene ether acetate (I) 40, methanol 45.4 and a catalyst prepared by drying and calcining Ca(NO₃)₂·4H₂O and γ-Al₂O₃ (CaO 20 and Al₂O₃ 80%) 1 g were reacted at 55° for 150 min in a slurry reactor to give a product with I conversion 84.6%.

IT 1314-13-2, Zinc oxide, uses 7631-86-9, Silica,

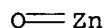
uses 19154-63-3, Zinc nitrate, tetrahydrate

RL: CAT (Catalyst use); USES (Uses)

(catalyst; for preparation of hydroxy group end-capped polyether glycols by alcoholysis)

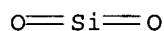
RN 1314-13-2 HCAPLUS

CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)



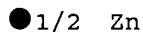
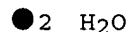
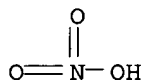
RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 19154-63-3 HCAPLUS

CN Nitric acid, zinc salt, tetrahydrate (8CI, 9CI) (CA INDEX NAME)



L16 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:380328 HCAPLUS

DOCUMENT NUMBER: 122:133411

TITLE: Preparation of 3-[N-(2-aminoethyl)amino]propyltrimethoxysilane

INVENTOR(S): Marciniec, Bogdan; Gulinski, Jacek; Mirecki, Janusz; Nowicka, Teresa

PATENT ASSIGNEE(S): Uniwersytet im. Adama Mickiewicza, Pol.

SOURCE: Pol., 4 pp.

CODEN: POXXA7

DOCUMENT TYPE: Patent

LANGUAGE: Polish

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| PL 162752 | B1 | 19940131 | PL 1990-285570 | 19900608 |
| PRIORITY APPLN. INFO.: | | | PL 1990-285570 | 19900608 |

OTHER SOURCE(S): CASREACT 122:133411; MARPAT 122:133411

AB The title compound is prepared by catalytic addition reaction of trichlorosilane

to allyl chloride, alcoholysis of the (3-chloropropyl)trichlorosilane thus

formed to give (3-chloropropyl)trimethoxysilane, followed by condensation reaction with ethylenediamine such that the addition reaction of trichlorosilane with allyl chloride occurs in presence of a catalyst consisting of a **platinum** complex $\text{Pt}(\text{PPh}_3)_2\text{X}$ (X = ethylene, $\text{CH}_2:\text{CHSiY}_3$, Y = Me, EtO). Thus, in an example, the title compound is obtained in 85% yield when $\text{Pt}(\text{PPh}_3)_2[\text{CH}_2:\text{CHSi}(\text{OEt})_3]$ was used as the catalyst in silylation of 0.4 mol allyl chloride with 0.4 mol trichlorosilane.

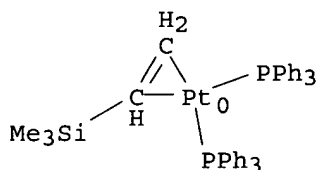
IT 62943-73-1

RL: CAT (Catalyst use); USES (Uses)

(preparation of [N-(aminoethyl)amino]propyltrimethoxysilane by silylation of allyl chloride in presence of **platinum** catalyst and subsequent methanolysis)

RN 62943-73-1 HCAPLUS

CN Platinum, $[(\eta^2\text{-ethenyl})\text{trimethylsilane}]\text{bis}(\text{triphenylphosphine})$ - (9CI)
(CA INDEX NAME)



IT 12120-15-9, (Ethylene)bis(triphenylphosphine)**platinum**

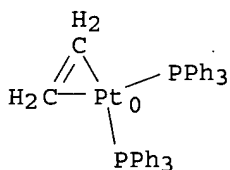
149796-86-1

RL: CAT (Catalyst use); USES (Uses)

(preparation of [N-(aminoethyl)amino]propyltrimethoxysilane by silylation of allyl chloride in presence of **platinum** catalyst and subsequent methanolysis and amination)

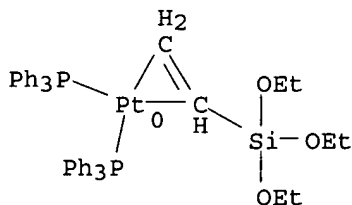
RN 12120-15-9 HCAPLUS

CN Platinum, $(\eta^2\text{-ethene})\text{bis}(\text{triphenylphosphine})$ - (9CI) (CA INDEX NAME)



RN 149796-86-1 HCAPLUS

CN Platinum, $[(\eta^2\text{-ethenyl})\text{triethoxysilane}]\text{bis}(\text{triphenylphosphine})$ - (9CI)
(CA INDEX NAME)



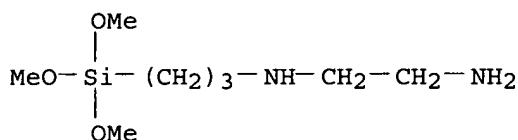
IT 1760-24-3P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of [N-(aminoethyl)amino]propyltrimethoxysilane by silylation of allyl chloride in presence of **platinum** catalyst and subsequent **methanolysis** and amination)

RN 1760-24-3 HCAPLUS

CN 1,2-Ethanediamine, N-[3-(trimethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



L16 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1987:553940 HCAPLUS

DOCUMENT NUMBER: 107:153940

TITLE: Carboxylic acid esters from nitriles and alcohols

INVENTOR(S): Matsuda, Fujio; Kato, Kozo

PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| JP 62106049 | A2 | 19870516 | JP 1985-242679 | 19851031 |
| PRIORITY APPLN. INFO.: | | | JP 1985-242679 | 19851031 |

AB Title compds. were prepared by gaseous-phase catalytic reaction of nitriles, H₂O, acids, and alcs. Thus, CH₂:CHCN, aqueous HNO₃, and MeOH were fed to a reactor filled with MoO₃-Fe₂O₃ under a stream of N at 350° to give 55.3% Me acrylate at 90.2% conversion, CH₂:CHCO₂H, and CH₂:CHCONH₂.

IT 1309-37-1, uses and miscellaneous 1314-13-2, uses and miscellaneous 1317-38-0, uses and miscellaneous 7440-05-3, uses and miscellaneous 7440-06-4, uses and miscellaneous

RL: CAT (Catalyst use); USES (Uses)

(catalysts containing, for **alcoholysis** of nitriles, carboxylate esters from)

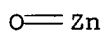
RN 1309-37-1 HCAPLUS

CN Iron oxide (Fe₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

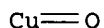
RN 1314-13-2 HCAPLUS

CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)



RN 1317-38-0 HCAPLUS

CN Copper oxide (CuO) (8CI, 9CI) (CA INDEX NAME)



RN 7440-05-3 HCAPLUS
 CN Palladium (8CI, 9CI) (CA INDEX NAME)

Pd

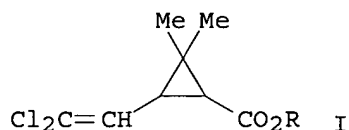
RN 7440-06-4 HCAPLUS
 CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

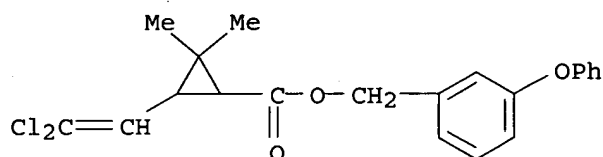
L16 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1984:5929 HCAPLUS
 DOCUMENT NUMBER: 100:5929
 TITLE: 3-Phenoxybenzyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate
 INVENTOR(S): Halfon, Marc; Scharpf, William G.
 PATENT ASSIGNEE(S): USA
 SOURCE: Def. Publ. U. S. Pat. Off. T, 23 pp.
 CODEN: USXXBN
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------|
| ----- | --- | ----- | ----- | ----- |
| US 102907 | H | 19830405 | US 1982-381997 | 19820525 |
| PRIORITY APPLN. INFO.: | | | US 1979-10183 | A1 19790207 |

GI



AB The title **insecticide I** (R = 3-PhOC₆H₄CH₂) was prepared in 94.8% yield (91.4% purity) by **alcoholysis** of I (R = Et, Me) with 3-PhOC₆H₄CH₂OH in the presence of Ti isopropoxide.
 IT 52645-53-1P
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)
 RN 52645-53-1 HCAPLUS
 CN Cyclopropanecarboxylic acid, 3-(2,2-dichloroethenyl)-2,2-dimethyl-, (3-phenoxyphenyl)methyl ester (9CI) (CA INDEX NAME)



L16 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1980:22138 HCAPLUS

DOCUMENT NUMBER: 92:22138

TITLE: Preparation of 3-phenoxybenzyl 3-(2,2-dihalovinyl)-2,2-dimethylcyclopropanecarboxylate

INVENTOR(S): Halfon, Marc; Scharpf, William George

PATENT ASSIGNEE(S): FMC Corp., USA

SOURCE: Brit. UK Pat. Appl., 3 pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------|
| GB 2005269 | A | 19790419 | GB 1978-38708 | 19780929 |
| GB 2005269 | B2 | 19820310 | | |
| US 4166870 | A | 19790904 | US 1977-839057 | 19771003 |
| PRIORITY APPLN. INFO.: | | | US 1977-839057 | A 19771003 |
| | | | GB 1973-40300 | A 19730824 |
| | | | US 1974-500780 | A1 19740826 |
| | | | US 1976-745271 | A1 19761126 |

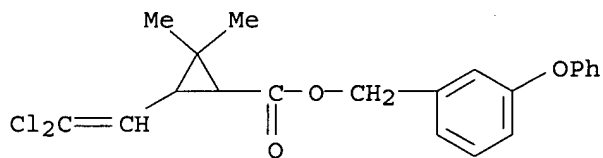
AB An insecticidal title compound was prepared Thus, 3-phenoxybenzyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate was prepared (94.8%) from the corresponding Et ester by treatment with 3-PhOC6H4CH2OH 13 h in refluxing anhydrous octane containing (Me2CHO)4Ti.

IT 52645-53-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, by titanium-catalyzed **alcoholysis** of lower alkyl esters)

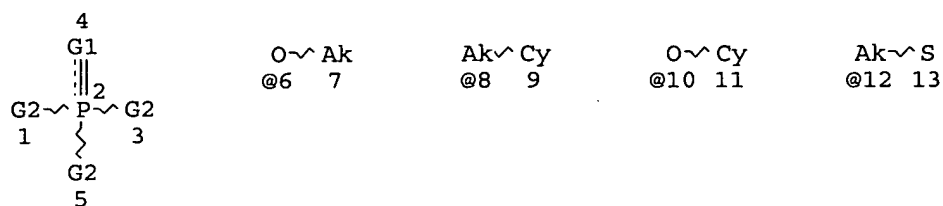
RN 52645-53-1 HCAPLUS

CN Cyclopropanecarboxylic acid, 3-(2,2-dichloroethenyl)-2,2-dimethyl-,
(3-phenoxyphenyl)methyl ester (9CI) (CA INDEX NAME)



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L1 STR

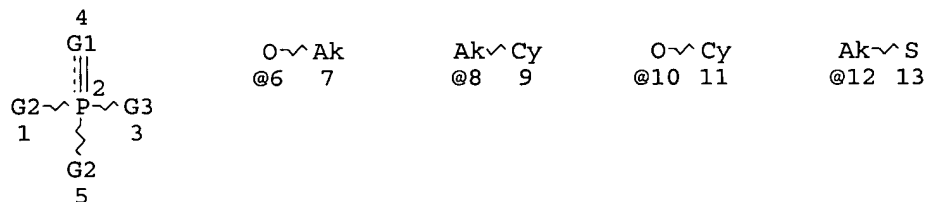


S~Ak
@14 15

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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L2 197145 SEA FILE=REGISTRY SSS FUL L1
L3 STR



S~Ak @14 15 Cy~Cy 16 17

VAR G1=O/S
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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE
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L5 5443 SEA FILE=HCAPLUS ABB=ON PLU=ON L4
L6 15230 SEA FILE=HCAPLUS ABB=ON PLU=ON (ALCOHOLYSIS/CV OR METHANOLYSI
S/CV OR "METHANOLYSIS CATALYSTS"/CV OR "METHANOLYSIS KINETICS"/
CV) OR ALCOHOLYSIS OR METHANOLYSIS
L7 31 SEA FILE=HCAPLUS ABB=ON PLU=ON L5 AND L6

L8 565 SEA FILE=REGISTRY ABB=ON PLU=ON PESTICIDE OR INSECTICIDE OR
 PARAOXON OR G(2A)AGENT OR VX
 L9 803238 SEA FILE=HCAPLUS ABB=ON PLU=ON L8 OR ORGANOPHOS? OR PESTICIDE
 OR INSECTICIDE OR PARAOXON OR G(2A)AGENT OR VX
 L10 102 SEA FILE=HCAPLUS ABB=ON PLU=ON L9(L)L6
 L11 273979 SEA FILE=REGISTRY ABB=ON PLU=ON LANTH? OR CU2? OR COOPER OR
 ZINC OR YTTRIUM OR SCANDIUM OR ZN2? OR LA3?
 L12 214880 SEA FILE=REGISTRY ABB=ON PLU=ON PT2? OR PLATINUM OR PALLADIUM
 OR PD2?
 L13 1455555 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 OR L12 OR LANTH? OR CU2?
 OR COOPER OR PT2? OR PLATINUM OR PALLADIUM OR ZINC OR YTTRIUM
 OR SCANDIUM OR PD2? OR ZN2? OR LA3?
 L16 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L10 AND L13
 L17 176908 SEA FILE=REGISTRY ABB=ON PLU=ON L2 NOT L4
 L18 153164 SEA FILE=HCAPLUS ABB=ON PLU=ON L17
 L19 101 SEA FILE=HCAPLUS ABB=ON PLU=ON L18(L)L6
 L20 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND L13
 L22 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 NOT (L7 OR L16)

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=> d ibib abs hitstr l22 1-2

L22 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:439636 HCAPLUS

DOCUMENT NUMBER: 119:39636

TITLE: Reactions of **lanthanide** nitrates with
dimethylbenzoylphosphonate

AUTHOR(S): Platt, Andrew W. G.

CORPORATE SOURCE: Chem. Div., Staffordshire Univ., Stoke-on-Trent, ST4
2DE, UK

SOURCE: Polyhedron (1993), 12(5), 467-72

CODEN: PLYHDE; ISSN: 0277-5387

DOCUMENT TYPE: Journal

LANGUAGE: English

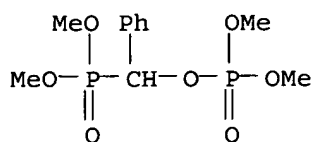
AB The reactions between $\text{Ln}(\text{NO}_3)_3$ ($\text{Ln} = \text{La}, \text{Ce}, \text{Yb}$) and $(\text{MeO})_2\text{P}(\text{:O})\text{Bz}$ in MeOH
 were studied. The products of the reaction are $(\text{MeO})_2\text{P}(\text{:O})\text{H}$,
 $[(\text{MeO})_2\text{P}(\text{:O})]_2\text{C}(\text{OH})\text{Ph}$ and BzOMe . At high concns. of reactants
 $\text{Ln}(\text{NO}_3)_3\{[(\text{MeO})_2\text{P}(\text{:O})]_2\text{C}(\text{OH})\text{Ph}\}_2$ are formed ($\text{Ln} = \text{La}, \text{Ce}$) while loss
 of NO_3^- occurs for the heavier metals giving $\text{Ln}(\text{PO}_4)\{\text{MeO})_2\text{P}(\text{:O})\text{H}\}_2 \cdot \text{H}_2\text{O}$ (Ln
 $= \text{Yb}$). The kinetics of the reaction in dilute solution were studied and a
 mechanism proposed. Derivation of a rate equation from the full mechanism
 is not possible but the kinetics data were fitted to an approx. expression
 and the results compared with 1st order anal. Supporting evidence for the
 proposed mechanism (mainly ^{31}P NMR spectroscopy) is presented.

IT 16115-01-8P

RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in **methanolysis** of dimethylbenzoylphosphonate
 in presence of **lanthanide** nitrates)

RN 16115-01-8 HCAPLUS

CN Phosphoric acid, (dimethoxyphosphinyl)phenylmethyl dimethyl ester (9CI)
 (CA INDEX NAME)

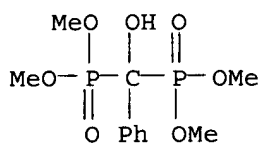


IT 32249-59-5P 145161-47-3P

RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in **methanolysis** of dimethylbenzoylphosphonate
 in presence of **lanthanide** nitrates, kinetics of)

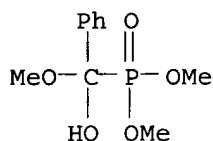
RN 32249-59-5 HCAPLUS

CN Phosphonic acid, (hydroxyphenylmethylene)bis-, tetramethyl ester (9CI)
 (CA INDEX NAME)



RN 145161-47-3 HCAPLUS

CN Phosphonic acid, (hydroxymethoxyphenylmethyl)-, dimethyl ester (9CI) (CA
 INDEX NAME)

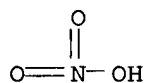


IT 10099-59-9, Lanthanum trinitrate

RL: PROC (Process)
 (methanolysis of dimethylbenzoylphosphonate in presence of, kinetics
 of)

RN 10099-59-9 HCAPLUS

CN Nitric acid, lanthanum(3+) salt (8CI, 9CI) (CA INDEX NAME)



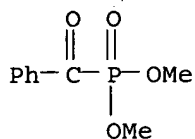
● 1/3 La(III)

IT 18106-71-3, Dimethylbenzoylphosphonate

RL: RCT (Reactant); RACT (Reactant or reagent)
 (methanolysis of, in presence of **lanthanide**
 nitrates, kinetics of)

RN 18106-71-3 HCAPLUS

CN Phosphonic acid, benzoyl-, dimethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX
 NAME)

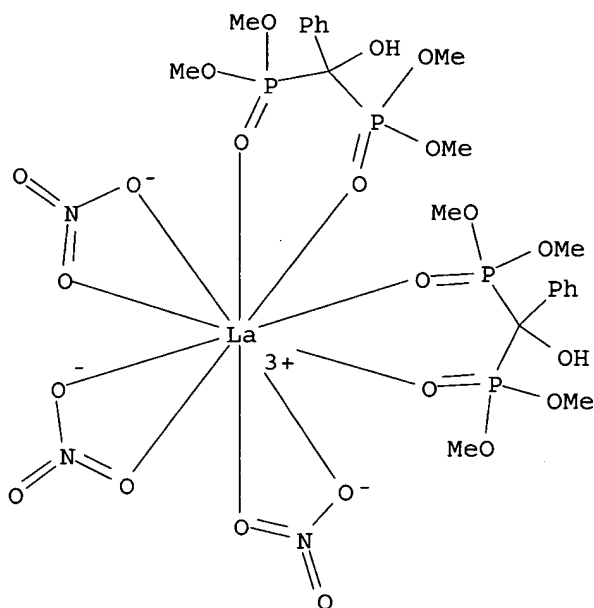


IT 148423-41-0P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 148423-41-0 HCAPLUS

CN Lanthanum, tris(nitrato-O,O')bis[tetramethyl (hydroxyphenylmethylene)bis[p
hosphonate]]- (9CI) (CA INDEX NAME)



L22 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1987:584677 HCAPLUS

DOCUMENT NUMBER: 107:184677

TITLE: Extraction chemistry of rare earths by monoalkyl
isopropylphosphonates

AUTHOR(S): Yuan, Chengye; Yan, Jinying; Feng, Hanzhen; Long,
Haiyan; Wu, Fubing; Jin, Pinli

CORPORATE SOURCE: Shanghai Inst. Org. Chem., Acad. Sin., Shanghai, Peop.
Rep. China

SOURCE: Scientia Sinica, Series B: Chemical, Biological,
Agricultural, Medical & Earth Sciences (English
Edition) (1987), 30(7), 681-91

CODEN: SSBSEF; ISSN: 0253-5823

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The influence of chemical structure of ester alkyl groups of monoalkyl
isopropylphosphonates on extraction behavior of rare earths was studied. The
monoalkyl isopropylphosphonate bearing a β -substituted ester alkyl

group shows a high Kex value, which is evidently depressed, usually by 2 orders of magnitude, by introducing a branch chain on the α -position of the ester alkyl group. The steric effect of the ligand is usually enhanced due to the characteristic **lanthanide** contraction. The extraction chemical of rare earths by monoamylnonyl isopropylphosphonates

(MANPP)

was studied in detail. The thermodyn. function was estimated and the "tetrad effect" between Kex value or ΔG value and atomic number was observed. In addition, the composition and structure of the coordinated compound was studied. As

demonstrated by the exptl. data, the extractive separation of Sm and Nd by MANPP in chloride solution was better than that in the nitrate system.

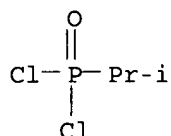
IT 1498-46-0, Isopropylphosphonyl dichloride

RL: RCT (Reactant); RACT (Reactant or reagent)

(alcoholysis of, in preparation of extractants)

RN 1498-46-0 HCAPLUS

CN Phosphonic dichloride, (1-methylethyl)- (9CI) (CA INDEX NAME)



IT 7439-91-0, Lanthanum, properties 7440-65-5,

Yttrium, properties

RL: PRP (Properties)

(extraction of, by alkyl isopropylphosphonates)

RN 7439-91-0 HCAPLUS

CN Lanthanum (8CI, 9CI) (CA INDEX NAME)

La

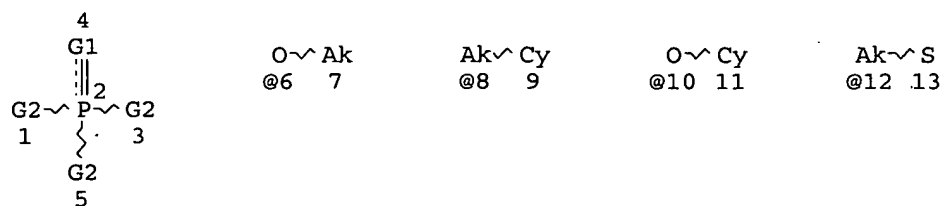
RN 7440-65-5 HCAPLUS

CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

=> => d stat que

L1 STR

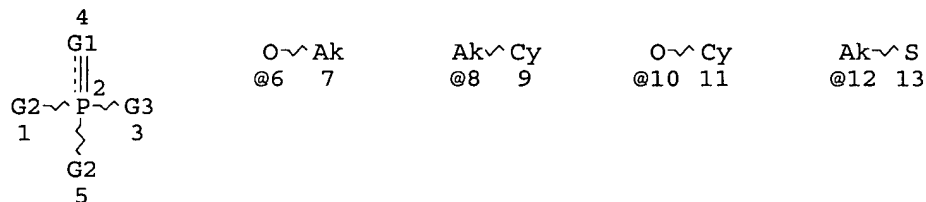


S~Ak
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L2 197145 SEA FILE=REGISTRY SSS FUL L1
L3 STR



S~Ak
@14 15

Cy~Cy
16 17

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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE
L4 20237 SEA FILE=REGISTRY SUB=L2 SSS FUL L3
L5 5443 SEA FILE=HCAPLUS ABB=ON PLU=ON L4
L6 15230 SEA FILE=HCAPLUS ABB=ON, PLU=ON (ALCOHOLYSIS/CV OR METHANOLYSI
S/CV OR "METHANOLYSIS CATALYSTS"/CV OR "METHANOLYSIS KINETICS"/
CV) OR ALCOHOLYSIS OR METHANOLYSIS
L7 31 SEA FILE=HCAPLUS ABB=ON PLU=ON L5 AND L6

L8 565 SEA FILE=REGISTRY ABB=ON PLU=ON PESTICIDE OR INSECTICIDE OR
 PARAOXON OR G(2A)AGENT OR VX
 L9 803238 SEA FILE=HCAPLUS ABB=ON PLU=ON L8 OR ORGANOPHOS? OR PESTICIDE
 OR INSECTICIDE OR PARAOXON OR G(2A)AGENT OR VX
 L10 102 SEA FILE=HCAPLUS ABB=ON PLU=ON L9(L)L6
 L11 273979 SEA FILE=REGISTRY ABB=ON PLU=ON LANTH? OR CU2? OR COOPER OR
 ZINC OR YTTRIUM OR SCANDIUM OR ZN2? OR LA3?
 L12 214880 SEA FILE=REGISTRY ABB=ON PLU=ON PT2? OR PLATINUM OR PALLADIUM
 OR PD2?
 L13 145555 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 OR L12 OR LANTH? OR CU2?
 OR COOPER OR PT2? OR PLATINUM OR PALLADIUM OR ZINC OR YTTRIUM
 OR SCANDIUM OR PD2? OR ZN2? OR LA3?
 L16 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L10 AND L13
 L17 176908 SEA FILE=REGISTRY ABB=ON PLU=ON L2 NOT L4
 L18 153164 SEA FILE=HCAPLUS ABB=ON PLU=ON L17
 L19 101 SEA FILE=HCAPLUS ABB=ON PLU=ON L18(L)L6
 L20 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L19 AND L13
 L22 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L20 NOT (L7 OR L16)
 L23 17113 SEA FILE=HCAPLUS ABB=ON PLU=ON (L13(L)L9) NOT (L7 OR L16 OR
 L22)
 L24 467 SEA FILE=HCAPLUS ABB=ON PLU=ON L23 AND DECOMP?
 L26 554 SEA FILE=HCAPLUS ABB=ON PLU=ON DECOMP?(L)ORGANOPHOS?
 L27 26 SEA FILE=HCAPLUS ABB=ON PLU=ON L24 AND L26

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=> d ibib abs hitstr l27 1-26

L27 ANSWER 1 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2005:372126 HCAPLUS
 TITLE: The synergistic effect of organophosphorus and
 dithiocarbamate ligands on metal extraction in
 supercritical CO2
 AUTHOR(S): Koh, Moonsung; Park, Kwangheon; Yang, Doohyun; Kim,
 Hakwon; Kim, Hongdoo
 CORPORATE SOURCE: Green Nuclear Research Laboratory, EIRC, Kyung Hee
 University, Kyungkido, 449-701, S. Korea
 SOURCE: Bulletin of the Korean Chemical Society (2005), 26(3),
 423-427
 CODEN: BKCSDE; ISSN: 0253-2964
 PUBLISHER: Korean Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The bis(2,4,4-trimethylpentyl)phosphinic acid (Cyanex-272) and sodium
 diethyl- dithiocarbamate (NaDDC) ligands were used to extract of metal ions
 (Cd2+, Co2+, Cu2+, Pb2+, Zn2+) in supercrit. CO2.
 Expts. showed a strong synergistic effect and better extraction efficiency if
 the two ligands were used together. In-situ UV-visible observation
 indicates that NaDDC in the water/supercrit. CO2 started to **decomp**
 . slowly. The synergistic effect seems to come from the deprotonation of
 the **organophosphorus** ligand by amines from the **decompd**
 . NaDDC. The enhancing role of amines was confirmed using the mixture of
 Cyanex-272 and diethylamine(DEA) in the metal extraction
 REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 2 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2004:780573 HCAPLUS

DOCUMENT NUMBER: 141:265170
 TITLE: Method of **decomposing organophosphorus** compounds using **lanthanum** ion
 INVENTOR(S): Brown, R. Stanley; Neverov, Alexei A.; Tsang, Josephine S. W.
 PATENT ASSIGNEE(S): Queen's University at Kingston, Can.
 SOURCE: PCT Int. Appl., 68 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| WO 2004080543 | A2 | 20040923 | WO 2004-CA379 | 20040312 |
| WO 2004080543 | A3 | 20041118 | | |
| WO 2004080543 | B1 | 20050203 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |

US 2004230082 A1 20041118 US 2004-798880 20040312

PRIORITY APPLN. INFO.: US 2003-453762P P 20030312

AB Methods and kits for **decomposing organophosphorus** compds. in nonaq. media at ambient conditions are described. Insecticides, pesticides, and chemical warfare agents can be quickly **decomposed** to nontoxic products. The method comprises combining the **organophosphorus** compound with a nonaq. solution, preferably an alc., comprising metal ions and at least a trace amount of alkoxide ions. In a 1st preferred embodiment, the metal ion is a La ion. In a 2nd preferred embodiment, the metal ion is a transition metal.

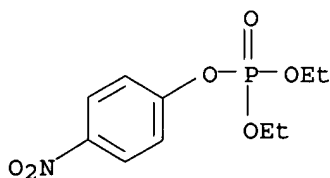
IT 311-45-5, **Paraaxon**

RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); OCCU (Occurrence); PROC (Process)

(method of **decomposing organophosphorus** compds. using **lanthanum** ion)

RN 311-45-5 HCAPLUS

CN Phosphoric acid, diethyl 4-nitrophenyl ester (9CI) (CA INDEX NAME)



IT 7439-91-0D, Lanthanum, compds. 10044-94-7,

Lanthanum methoxide

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(method of **decomposing organophosphorus compds. using lanthanum ion**)

RN 7439-91-0 HCAPLUS

CN Lanthanum (8CI, 9CI) (CA INDEX NAME)

La

RN 10044-94-7 HCAPLUS

CN Methanol, lanthanum salt (3:1) (8CI, 9CI) (CA INDEX NAME)

H₃C-OH

● 1/3 La(III)

L27 ANSWER 3 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:571030 HCAPLUS

DOCUMENT NUMBER: 141:380539

TITLE: Organophosphite transformations in flexible PVC formulations

AUTHOR(S): Jakupca, Michael R.; Harr, Mark E.; Stevenson, Don R.

CORPORATE SOURCE: Dover Chemical Corporation, Dover, OH, 44622, USA

SOURCE: Journal of Vinyl & Additive Technology (2004), 10(2), 99-103

CODEN: JVATF4; ISSN: 1083-5601

PUBLISHER: John Wiley & Sons, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB **Organophosphites** are a versatile component of liquid PVC heat stabilizers and stabilize PVC through a variety of mechanisms.

Organophosphites can **decompose** peroxides, replace labile chlorines on the PVC backbone, scavenge HCl (via the Arbuzov rearrangement), complex Lewis acids, and add to double bonds. This paper attempts to identify the relative contributions of these mechanisms in both model systems and flexible PVC formulations.

IT 7646-85-7, Zinc chloride, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with **organophosphite** heat stabilizers)

RN 7646-85-7 HCAPLUS

CN Zinc chloride (ZnCl₂) (9CI) (CA INDEX NAME)

Cl-Zn-Cl

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 4 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:400612 HCAPLUS

DOCUMENT NUMBER: 141:133070

TITLE: Heterocyclic Amine Derivatives of Zinc
Organophosphonates

AUTHOR(S): Clarke, Rachael C.; Latham, Kay; Rix, Colin J.; Hobday, Malcolm

CORPORATE SOURCE: Department of Applied Chemistry, RMIT University, Melbourne, 3001, Australia

SOURCE: Chemistry of Materials (2004), 16(12), 2463-2470
CODEN: CMATEX; ISSN: 0897-4756

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:133070

AB Novel Zn(II) **organophosphonates** with coordinated 2,2'-bipyridyl (2,2'-bipy, C10H8N2) and 1,10-phenanthroline (phen, C12H8N2) ligands (with the proposed formulations: Zn(O3PPh)(C12H8N2), **Zn2**(O3PR)2(C12H8N2) (R = C6H5CH2, C2H5, CH3), and **Zn2**(O3PR)2(C10H8N2)(H2O) (R = C6H5, C6H5CH2)) was prepared and characterized. The amine derivs. have the same 1:1 metal/P ligand ratio as the parent Zn(II) **organophosphonates**, and, with the exception of the phen derivative of Zn(II) phenylphosphonate, Zn(O3PPh)(C12H8N2), all of the amine derivs. possess a metal/P/amine ratio of 2p2:1 where one amine ligand is coordinated to every two Zn atoms. Elemental analyses, FTIR, TGA, XPS, and solid-state 31P/13C MAS NMR data are consistent with the proposed formulations. Powder XRD measurements show Zn(O3PPh)(C12H8N2) and **Zn2**(O3PCH2C6H5)2(C12H8N2) to be layered, whereas the other complexes are nonlamellar materials. XPS data suggests that the N atoms of the amine ligands are coordinated to the Zn center in an unsym. manner.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 5 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:880987 HCAPLUS

DOCUMENT NUMBER: 138:141768

TITLE: Evaluation of bioremediation potential of organophosphorus pesticide dimethoate 30% EC by heavy metal and antibiotic resistant *Proteus vulgaris* isolated from Ganges at Sreerampore, India

AUTHOR(S): Mandal, Manisha; Mandal, S.; Pal, N. K.

CORPORATE SOURCE: Department of Bacteriology and Serology, Calcutta School of Tropical Medicine, Kolkata, 700 073, India

SOURCE: Research Journal of Chemistry and Environment (2002), 6(2), 49-52
CODEN: RJCEF7; ISSN: 0972-0626

PUBLISHER: Research Journal of Chemistry and Environment

DOCUMENT TYPE: Journal

LANGUAGE: English

AB This work characterized an isolate of *Proteus vulgaris* from Ganges River water of the Sreerampore region near Kolkata, India. The isolate exhibited resistance to ampicillin, chloramphenicol, tetracycline, nalidixic acid, and streptomycin (AR, CR, TR, NxR, SR) but sensitivity to ciprofloxacin, gentamycin, and norfloxacin (CiR, GR, NR). The bacteria tolerated heavy metals: Hg2+, Cd2+, and **Cu2+** up to concns. of 0.25, 3, and 10 mM resp. A **pesticide** resistance study demonstrated min. inhibitory concns. (µg/mL) for 4 **pesticides**: dimethoate, 30% EC [D(10)]; methyl parathion, 50% EC [M (50)]; endosulfan, 35% EC [E(100)]; and carbaryl, 50% EC [Cb(50)]. This strain, when used as donor in a conjugation experiment with a plasmid-less *Escherichia coli* C 600 (NxR F-) recipient, showed the resistance to antibiotics, heavy metals, and **pesticides** was not transferred. Resistance to C, T, Cd2+, Hg2+, and D was altered following plasmid curing with 0.1 mg/mL

ethidium bromide (EB). The *P. vulgaris* strain rendered resistivity toward D to the otherwise sensitive *E. coli* C600 strain in a deoxycholate agar (DCA) plate containing D (5 µg/mL). The cured strain of *P. vulgaris* did not exhibit such characteristics. Following the alkaline lysis method, the wild type of *P. vulgaris* harbored a single plasmid, but the cured mutant strain failed to exhibit any plasmid. Results suggested the *P. vulgaris* plasmid encoded the resistance pattern of "C T C2+ Hg2+ D" and was associated with the degradation of D.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 6 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:295208 HCAPLUS

DOCUMENT NUMBER: 135:121987

TITLE: Direct use of chiral or achiral organophosphorus boranes as pro-ligands for transition metal catalyzed reactions

AUTHOR(S): Darcel, C.; Kaloun, E. B.; Merdes, R.; Moulin, D.; Riegel, N.; Thorimbert, S.; Pierre Genet, J.; Juge, S.

CORPORATE SOURCE: 'Synthese Organique Selective et Chimie Organometallique', FRE CNRS 2126, Unite Mixte Universite de Cergy-Pontoise/ESCOM, Cergy-Pontoise, 95031, Fr.

SOURCE: Journal of Organometallic Chemistry (2001), 624(1-2), 333-343

CODEN: JORCAI; ISSN: 0022-328X

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 135:121987

AB Chiral or achiral **organophosphorus** borane complexes were used without isolation of the free tricoordinate P(III) ligand; thus, the borane adducts could be used either directly with metal salts to perform the catalysis, or they could be **decomplexed** by DABCO, or cyclooctadiene, and used in situ to generate the catalytic species. Chiral copper, **palladium** and rhodium complexes prepared using this method, were tested in asym. organometallic catalyzed 1,4-addition to 2-cyclohexenone, allylation of Schiff base and hydrogenation of α-acetamidocinnamic acid derivs., resp.

REFERENCE COUNT: 105 THERE ARE 105 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 7 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:228760 HCAPLUS

DOCUMENT NUMBER: 134:226776

TITLE: Catalysts for destruction of organophosphonate compounds

INVENTOR(S): Cao, Lixin; Satyapal, Sunita; Suib, Steven L.; Tang, Xia; Freihaut, James D.

PATENT ASSIGNEE(S): Carrier Corporation, USA

SOURCE: PCT Int. Appl., 27 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|-------|-----------------|-------|
| ----- | ---- | ----- | ----- | ----- |

WO 2001021262 A1 20010329 WO 2000-US25815 20000920
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CR, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,
 ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV,
 MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE,
 SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, YU, ZA, ZW
 RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
 PT, SE
 EP 1214124 A1 20020619 EP 2000-961975 20000920
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL
 US 6596915 B1 20030722 US 2000-665805 20000920
 US 2003135082 A1 20030717 US 2002-271043 20021015
 PRIORITY APPLN. INFO.: US 1999-155430P P 19990922
 US 1999-155524P P 19990922
 US 2000-655806 A3 20000920
 WO 2000-US25815 W 20000920

AB A catalyst composition is provided effective for catalyzing the destruction of **organophosphorus** compds. including chemical warfare agents, pesticides, and solvents. The catalyst composition includes a catalyst material selected from the group consisting of vanadium oxide or manganese oxide or mixts. thereof deposited upon a catalyst support selected from the group consisting of alumina, silica or titania or mixts. thereof. Also, a method is provided for **decomposing** volatile organic compds., including **organophosphorus** compds. including chemical warfare agents, pesticides, and solvents, by contacting the volatile organic compds. with a manganese oxide catalyst composition in the presence of visible light or with a catalyst composition heated to a temperature of at least 300°C and most advantageously to at least 450°C, the catalyst composition containing a catalyst selected from the group consisting of manganese oxide, vanadium, vanadium oxide, activated carbon or diphosphorus pentaoxide. Spent catalyst composition may be regenerated for **decomposing** volatile organic compds. by washing the spent catalyst composition with distilled deionized water.

IT 7440-06-4, Platinum, uses
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts for destruction of **organophosphonate** compds.)
 RN 7440-06-4 HCAPLUS
 CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 8 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1999:96147 HCAPLUS
 DOCUMENT NUMBER: 130:141244
 TITLE: Large-pore alumina- and titania-containing adsorbents for removal of organophosphorus compounds from gas and liquid industrial processing streams
 INVENTOR(S): Nedez, Christophe; Laucher, Dominique
 PATENT ASSIGNEE(S): Rhodia Chimie, Fr.
 SOURCE: PCT Int. Appl., 20 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|--|----------|------------------|------------|
| WO 9904878 | A1 | 19990204 | WO 1998-FR1569 | 19980717 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| FR 2766388 | A1 | 19990129 | FR 1997-9499 | 19970724 |
| FR 2766388 | B1 | 20000114 | | |
| CA 2298973 | AA | 19990204 | CA 1998-2298973 | 19980717 |
| CA 2298973 | C | 20040330 | | |
| AU 9888122 | A1 | 19990216 | AU 1998-88122 | 19980717 |
| EP 1011839 | A1 | 20000628 | EP 1998-939702 | 19980717 |
| EP 1011839 | B1 | 20050406 | | |
| R: BE, DE, ES, FR, GB, IT, NL | | | | |
| BR 9811030 | A | 20000801 | BR 1998-11030 | 19980717 |
| JP 2001510722 | T2 | 20010807 | JP 2000-503916 | 19980717 |
| JP 3671146 | B2 | 20050713 | | |
| RU 2173202 | C1 | 20010910 | RU 2000-104468 | 19980717 |
| CZ 291198 | B6 | 20030115 | CZ 2000-276 | 19980717 |
| TW 476659 | B | 20020221 | TW 1998-87112131 | 19980923 |
| MX 200000798 | A | 20001030 | MX 2000-798 | 20000124 |
| US 6656363 | B1 | 20031202 | US 2000-463323 | 20000516 |
| PRIORITY APPLN. INFO.: | | | FR 1997-9499 | A 19970724 |
| | | | WO 1998-FR1569 | W 19980717 |
| AB | <p>Organophosphorus compds., containing trivalent or pentavalent phosphorus and at least one carbon atom, are removed from industrial gas or liquid processing streams by contact of the stream with a adsorbent comprised of Al₂O₃ and/or TiO₂, with sp. surface area >70 m²/g and a pore volume >0.5 cm³/g (especially with pore diameter >50Å, in which >0.35 cm³/g pore volume is derived from pores with diameter >100Å). The adsorbent can also contain an auxiliary element chosen from alkali metals, alkaline earth metals, rare earth metals, V, Nb, Ta, Cr, Mo, W, Fe, Co, Ni, Cu, Zn, Ru, Pd, Ga, and Zr. Organophosphorus compds. that can be removed by passage over the adsorbent include phosphines, phosphinites, phosphites, phosphonites, phosphinates, phosphonates, such as tert-butylphenylene tolyl phosphite, iso-Pr ditolyl phosphinite, iso-Pr ditolyl phosphonite, triaryl phosphites, and diaryl phosphites. The method is especially suitable for removing phosphorus-containing decomposition products (derived from catalysts) from dimerization of acrylonitrile or hydrocyanation of butadiene.</p> | | | |
| IT | <p>7440-05-3, Palladium, uses 7440-66-6, Zinc, uses</p> <p>RL: NUU (Other use, unclassified); USES (Uses)</p> <p>(adsorbents containing; large-pore alumina- and titania-containing adsorbents for removal of organophosphorus compds. from gas and liquid industrial processing streams)</p> | | | |
| RN | 7440-05-3 HCAPLUS | | | |
| CN | Palladium (8CI, 9CI) (CA INDEX NAME) | | | |

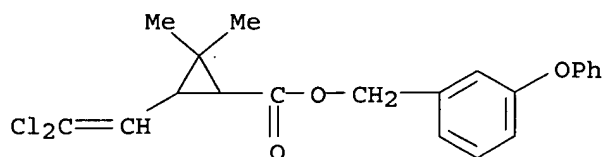
Pd

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 9 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:165240 HCAPLUS
DOCUMENT NUMBER: 128:267163
TITLE: Stability of pesticides in plant extracts used as calibrants in the gas chromatographic analysis of residues
AUTHOR(S): Kocourek, Vladimir; Hajslova, Jana; Holadova, Katerina; Poustka, Jan
CORPORATE SOURCE: Department of Food Chemistry and Analysis, Institute of Chemical Technology, Prague, 166 28, Czech Rep.
SOURCE: Journal of Chromatography, A (1998), 800(2), 297-304
CODEN: JCRAEY; ISSN: 0021-9673
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The stability of commonly used pesticides in plant sample exts. was evaluated. Matrixes differing in the character of coexts. were represented by wheat, oranges and white cabbage. After homogenization with Et acetate and anhydrous sodium sulfate, spiked filtrates were stored for 60 days at 20°C or 40°C. The decrease of concns. was observed at 20°C after 40 days for chlorothalonil and iprodione in cabbage exts. and some degradation was observed for most **organophosphates**, iprodione and pirimicarb in orange exts. At increased temperature (40°C), degradation of most pesticides in the orange and cabbage exts. was observed. No **decomposition** was noticed for synthetic pyrethroids in all tested exts. The stability of pesticides in wheat exts. was distinctly higher than that in other exts. Most pesticides are stable enough to store plant sample exts. several weeks prior to further handling, or to use them as calibrants to avoid matrix-induced enhanced GC response. Some degradation of pesticides, in "pure" Et acetate solns. was noticed only for some **organophosphates** (mevinphos, methamidophos, dichlorvos, heptenophos, pirimiphos-methyl) after 60 days at 40°C.
IT 52645-53-1, Permethrin
RL: ANT (Analyte); POL (Pollutant); PRP (Properties); ANST (Analytical study); OCCU (Occurrence)
(stability of **pesticides** in plant exts. used as calibrants in gas chromatog. anal. of residues)
RN 52645-53-1 HCAPLUS
CN Cyclopropanecarboxylic acid, 3-(2,2-dichloroethenyl)-2,2-dimethyl-, (3-phenoxyphenyl)methyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 10 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:98697 HCAPLUS

DOCUMENT NUMBER: 128:163890

TITLE: Studies on the stability of 89 pesticides in organic solvent

AUTHOR(S): Nemoto, Satoru; Takatsuki, Satoshi; Sasaki, Kumiko; Toyoda, Masatake

CORPORATE SOURCE: Natl. Inst. Health Sci., Tokyo, 158, Japan

SOURCE: Kokuritsu Iyakuhiin Shokuhin Eisei Kenkyusho Hokoku (1997), 115, 86-92

CODEN: KISHFC; ISSN: 1343-4292

PUBLISHER: Kokuritsu Iyakuhiin Shokuhin Eisei Kenkyusho Kagaku Busshitsu Johobu

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB The stability of 89 pesticides (17 organochlorine, 33 **organophosphorus**, 8 pyrethroid, 12 carbamate, and 19 other pesticides) in 6 kinds of organic solvents (methanol, ethanol, 2-propanol, Et acetate, n-hexane, and acetone) was investigated using gas chromatog./mass spectrometry(GC/MS). All of the investigated pesticides were stable in all of the tested organic solvents during storage for 6 h at room temperature in

the dark except captafol, captan, phosmet, chinomethionat, and dicofol. However, the losses of captafol, captan, phosmet, and chinomethionat were observed in methanol. The losses of captafol, captan, and phosmet were also observed in ethanol. Moreover, the loss of dicofol was observed in acetone. The loss of captafol dissolved in methanol at a concentration of 2 µg/mL was faster than those of captan, phosmet, and chinomethionat; the residual captafol was 75% after 30 min of storage. Dicofol dissolved in acetone also decreased during storage in a refrigerator. 4,4'-Dichlorobenzophenone (DCBP) and chlorobutanol were detected in the acetone solution of dicofol after storage. Furthermore, it was found that dicofol was **decomposed** by acetone at an injection port, and DCBP and chlorobutanol were formed when it was injected into GC with acetone.

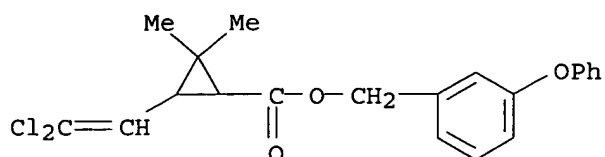
IT 52645-53-1, Permethrin

RL: PRP (Properties)

(stability of **pesticides** in organic solvent)

RN 52645-53-1 HCAPLUS

CN Cyclopropanecarboxylic acid, 3-(2,2-dichloroethenyl)-2,2-dimethyl-, (3-phenoxyphenyl)methyl ester (9CI) (CA INDEX NAME)



L27 ANSWER 11 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:267776 HCAPLUS

DOCUMENT NUMBER: 126:348669

TITLE: EXAFS studies of lanthanide coordination in crystalline phosphates and amorphous phytates

AUTHOR(S): Morss, Lester R.; Schmidt, Mark A. J.; Nash, Kenneth L.; Allen, Patrick G.; Bucher, Jerome J.; Edelstein, Norman; Shuh, David K.; Denecke, Melissa A.; Nitsche, Heino; Reich, Tobias

CORPORATE SOURCE: Chemistry Division, Argonne National Laboratory, Argonne, IL, 60439, USA

SOURCE: Synchrotron Radiation Techniques in Industrial, Chemical, and Materials Science, [Proceedings of the Combined Symposia on Applications of Synchrotron Research to Materials Science and Applications of Synchrotron Radiation in Chemistry and Related Fields], Washington, D. C., and Chicago, 1994, 1995 (1996), Meeting Date 1994-1995, 229-235. Editor(s): D'Amico, Kevin L.; Terminello, Louis J.; Shuh, David K. Plenum: New York, N. Y.

CODEN: 64HBA6

DOCUMENT TYPE: Conference

LANGUAGE: English

AB This report is part of a study to immobilize actinide ions in the near-surface environment of a radioactive waste disposal site by reacting actinides with **organophosphorus** complexants that **decomp** to inert, stable phosphates. In the initial phase of the study, Gd³⁺ and Nd³⁺ were used as models for Pu³⁺, Am³⁺, and Cm³⁺; phytic acid was chosen as the **organophosphorus** complexant. The goal of this part of the project was to determine the bonding in the precipitated **lanthanide** phytates.

L27 ANSWER 12 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:161805 HCAPLUS

TITLE: In-situ mineralization of actinides with phytic acid.

AUTHOR(S): Nash, Kenneth L.; Jensen, Mark P.; Morss, Lester R.; Appelman, Evan H.; Schmidt, Mark A.; Friedrich, Sarah
CORPORATE SOURCE: Chemistry Division, Argonne National Laboratory, Argonne, IL, 60439-4831, USA

SOURCE: Book of Abstracts, 213th ACS National Meeting, San Francisco, April 13-17 (1997), I&EC-137. American Chemical Society: Washington, D. C.

CODEN: 64AOAA

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB A new approach to the remediation of actinide contamination is described. A hydrolytically unstable **organophosphorus** compound, phytic acid, is introduced into the contaminated environment. In the short term (up to several hundred years), phytate acts as a cation exchanger to absorb mobile actinide ions from ground waters. Ultimately, phytate

decomps. to release phosphate and promote the formation of insol. phosphate mineral phases, considered an ideal medium to immobilize actinides, as it forms compds. with the lowest solubility of any candidate mineral species. This overview will discuss the rate of hydrolysis of phytic acid, the formation of **lanthanide/actinide** phosphate mineral forms, the cation exchange behavior of insol. phytate, and results from laboratory demonstration of the application to soils from the Fernald site.

L27 ANSWER 13 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:20568 HCAPLUS

DOCUMENT NUMBER: 126:41809

TITLE: Zinc Di(tert-butyl) phosphate Complexes as Precursors to Zinc Phosphates. Manipulation of Zincophosphate Structures

AUTHOR(S): Lugmair, Claus G.; Tilley, T. Don; Rheingold, Arnold L.

CORPORATE SOURCE: Department of Chemistry, University of California, Berkeley, CA, 94720-1460, USA

SOURCE: Chemistry of Materials (1997), 9(1), 339-348
CODEN: CMATEX; ISSN: 0897-4756

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The reaction of ZnEt_2 with $\text{HO}(\text{O})\text{P}(\text{OtBu})_2$ gives the insol. polymer $\{\text{Zn}[\text{O}_2\text{P}(\text{OtBu})_2]_2\}_n$ (1). In the presence of slight amts. of H_2O , this reaction produces good yields of the oxo-centered tetranuclear cluster $\text{Zn}_4(\mu_4\text{-O})[\text{O}_2\text{P}(\text{OtBu})_2]_6$ (2), which was characterized by x-ray crystallog. 2 is thermally labile and eliminates isobutene and H_2O over the temperature range 130-220°. The ceramic yield at 900° corresponds to the theor. yield for a $\text{Zn}_4\text{P}_6\text{O}_{19}$ material, and the observed products at this temperature are $\alpha\text{-Zn}_2\text{P}_2\text{O}_7$ and $\beta\text{-Zn}(\text{PO}_3)_2$ (by XRD). When heated in EtOH at 85° for 30 h, 2 converts to polymer 1 and ZnO . This transformation is facilitated by acids, which allow the conversion to occur at room temperature. Polymer 1, characterized by x-ray crystallog., adopts a zigzag structure with Zn atoms linked alternately by one and then three bridging phosphate groups. This structure is therefore different from that adopted by the other two organozincophosphate $\{\text{Zn}[\text{O}_2\text{P}(\text{OR})_2]_2\}_n$ polymers that are known, which exist as linear chains with the Zn atoms bridged by two phosphate groups. Polymer 1 undergoes a quant. pyrolytic conversion to $\beta\text{-Zn}(\text{PO}_3)_2$. Diffusion of a toluene solution of 2 into a CH_2Cl_2 solution of 1,6-hexanediamine produces a coordination network $\{\text{Zn}[\text{O}_2\text{P}(\text{OtBu})_2]_2[\text{H}_2\text{N}(\text{CH}_2)_6\text{NH}_2]\}_n$ (3), with elimination of ZnO . The network structure of 3 consists of $\{\text{Zn}[\text{O}_2\text{P}(\text{OtBu})_2]_2[\text{H}_2\text{N}(\text{CH}_2)_6\text{NH}_2]\}_n$ polymer strands interconnected via H bonds between the N-H and P=O groups to form layers stacked along the crystallog. b axis. Each polymer chain contains four-coordinate Zn atoms bonded to two monodentate di-tert-butylphosphate ligands and linked by 1,6-hexanediamine groups. Slabs of the layered structure are held together by a dense array of H bonds involving the N-H and P=O functionalities. These layers possess Zn phosphate/1,6-hexanediamine cores and are coated with tert-Bu groups such that there are only van der Waals interactions between layers. TGA and XRD studies show that 3 undergoes thermolysis to a mixture of crystalline $\alpha\text{-Zn}_2\text{P}_2\text{O}_7$ and $\beta\text{-Zn}(\text{PO}_3)_2$.

IT 7446-26-6P, Zinc pyrophosphate ($\text{Zn}_2\text{P}_2\text{O}_7$)

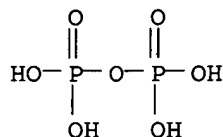
13566-15-9P, Zinc phosphate ($\text{Zn}(\text{PO}_3)_2$)

RL: SPN (Synthetic preparation); PREP (Preparation)

(formation in thermolysis of **zinc organophosphates**)

RN 7446-26-6 HCAPLUS

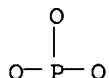
CN Diphosphoric acid, zinc salt (1:2) (9CI) (CA INDEX NAME)



●2 Zn

RN 13566-15-9 HCAPLUS

CN Metaphosphoric acid (HPO₃), zinc salt (8CI, 9CI) (CA INDEX NAME)



●1/2 Zn

ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

REFERENCE COUNT: 65 THERE ARE 65 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 14 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:742316 HCAPLUS

DOCUMENT NUMBER: 126:66540

TITLE: Immobilization of actinides in geomedias by phosphate precipitation

AUTHOR(S): Jensen, Mark P.; Nash, Kenneth L.; Morss, Lester R.; Appelman, Evan H.; Schmidt, Mark A.

CORPORATE SOURCE: Chemistry Div., Argonne National Lab., Argonne, IL, 60439-4831, USA

SOURCE: ACS Symposium Series (1996), 651(Humic and Fulvic Acids), 272-285

CODEN: ACSMC8; ISSN: 0097-6156

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A method is being developed to transform actinide ions in the near surface environment to less soluble, less reactive, thermodynamically stable phosphate minerals phases through application of **organophosphorus** complexants. These complexants **decompose** slowly, releasing phosphate to promote the formation of stable phosphate mineral phases, particularly with the more soluble trivalent, pentavalent, and hexavalent actinide ions. The complexant of choice, myo-inositol(hexakisphosphoric acid) or phytic acid, is a natural product widely used as a nutritional supplement. Phytic acid **decomps.** slowly in the absence of microbiol. effects, crystalline phosphate minerals are formed as a consequence of its **decomposition**, and the formation of actinide (**lanthanide**) phosphates reduces the solubility of trivalent and hexavalent metal ions under environmental conditions.

L27 ANSWER 15 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1996:219558 HCAPLUS
 TITLE: Immobilization of actinides in geomedia by phosphate mineralization: Radiotracer investigation of solubility.
 AUTHOR(S): Nash, Kenneth L.; Jensen, Mark P.; Schmidt, Mark A.
 CORPORATE SOURCE: Chemistry Division, Argonne National Laboratory, 60439-4831, USA
 SOURCE: Book of Abstracts, 211th ACS National Meeting, New Orleans, LA, March 24-28 (1996), I&EC-039. American Chemical Society: Washington, D. C.
 CODEN: 62PIAJ
 DOCUMENT TYPE: Conference; Meeting Abstract
 LANGUAGE: English
 AB A new method to reduce the potential environmental mobility of actinides by conversion to insol. mineral forms is under development. The method is comprised of the addition of a water-soluble, hydrolytically unstable **organophosphorus** complexant into the groundwater. The complexant functions initially as a cation exchanger but ultimately **decomps** . to release phosphate and promote the formation of insol. actinide phosphates. In this report, we discuss the effect of phosphate, calcium ion, pH, and selected chelating agents on the concentration of **lanthanide** and actinide cations in actual and simulated geomedia as monitored using radiotracer techniques. In addition, the cation exchange behavior of the preferred complexant (phytic acid) in simulated soil columns is examined. Work performed under the auspices of the U.S. Department of Energy, Office of Environmental Waste management, Efficient Sepns. and Processes Program under contract number W-31-109-ENG-38.

L27 ANSWER 16 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1995:924550 HCAPLUS
 TITLE: Spectroscopic studies of lanthanide coordination in crystalline and amorphous phosphates.
 AUTHOR(S): Morss, Lester R.; Schmidt, Mark A. J.; Nash, Kenneth L.; Allen, Patrick G.; Bucher, Jerome J.; Edelstein, Norman; Shuh, David K.
 CORPORATE SOURCE: Chemistry Division, Argonne National Laboratory, Argonne, IL, 60439, USA
 SOURCE: Book of Abstracts, 210th ACS National Meeting, Chicago, IL, August 20-24 (1995), Issue Pt. 2, NUCL-029. American Chemical Society: Washington, D. C.
 CODEN: 61XGAC
 DOCUMENT TYPE: Conference; Meeting Abstract
 LANGUAGE: English
 AB A method is being developed to immobilize actinide ions in the near-surface environment by reacting them with **organophosphorous** complexants that **decompose** to inert, stable phosphates. In the initial part of this study, aqueous solns. of **lanthanide**, nitrates at pH5 were reacted with myoinositolhexakis (dihydrogenphosphate) (phytic acid), which hydrolyzes to produce phosphoric acid. Amorphous **lanthanide** phytates have been prepared and studied by thermal anal., x-ray powder diffraction, and IR spectroscopy, as well as by EXAFS at the Stanford Synchrotron Radiation Laboratory (SSRL) on wiggler beamline 4-1 (unfocused) using a Si(220) double-crystal monochromator. Crystalline **lanthanide** oxides and orthophosphates were used as stds. The LIII EXAFS results on neodymium and gadolinium oxides, phosphates, and phytate will be presented.

L27 ANSWER 17 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:920970 HCAPLUS
 TITLE: Immobilization of actinides in geomedia by phosphate mineralization
 AUTHOR(S): Nash, Kenneth L.; Morss, Lester R.; Appelman, Evan H.; Jensen, Mark P.; Schmidt, Mark A.
 CORPORATE SOURCE: Chemistry Division, Argonne National Laboratory, Argonne, IL, 60439-4831, USA
 SOURCE: Book of Abstracts, 210th ACS National Meeting, Chicago, IL, August 20-24 (1995), Issue Pt. 1, I&EC-003. American Chemical Society: Washington, D. C.

CODEN: 61XGAC

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB A method is being developed to transform actinide ions in the near surface environment to less-soluble, less-reactive, thermodynamically stable phosphate mineral phases through the application of surface active **organophosphorus** complexants. These **organophosphorus** species are designed to **decompose** slowly in the environment to release phosphate. The slow-release of phosphate promotes the formation of stable mineral phases. In particular, the more soluble actinide species, the trivalent, pentavalent and hexavalent oxidation states, are targeted. The complexant of choice is myoinositol(hexakisphosphoric acid) or phytic acid. Phytic acid is a natural product widely used as a nutritional supplement. We have determined that phytic acid **decomps.** at a convenient rate, that crystalline phosphate minerals are formed as a consequence of the **decomposition**, and that the **lanthanide** /actinide phosphates reduce radionuclide solubility under environmental conditions. This technique also may have important applications in the stabilization of the tailings piles produced as a result of mining operations for uranium/thorium or strategic metals. Work Performed under the auspices of the Efficient Sepns. Program of the U.S. Department of Energy under contract W-31-109-ENG-38.

L27 ANSWER 18 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:610083 HCAPLUS

DOCUMENT NUMBER: 119:210083

TITLE: Study on the **decomposition** of **organophosphorous** insecticide in water by using solar energy

AUTHOR(S): Gao, Cuiqin; Dong, Yulin; Dong, Qinhua

CORPORATE SOURCE: Dep. Chem., Wuhan Univ., Wuhan, Peop. Rep. China

SOURCE: Wuhan Daxue Xuebao, Ziran Kexueban (1992), (3), 73-7

CODEN: WTHPDI; ISSN: 0253-9888

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB The influence of light source, photocatalyst, and other factors on the photodecompn. of the **organophosphorus** insecticide, malathion, in water was investigated. Malathion was photolyzed by UV light, and could be rapidly **decomposed** by a semiconductor photocatalytic reaction in the presence of O. Using solar energy, the photocatalytic **decomposition** of malathion in water is possible.

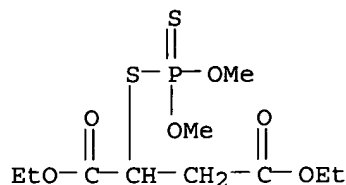
IT 121-75-5, Malathion

RL: RCT (Reactant); RACT (Reactant or reagent)

(photodegrdn. of, in water, solar, on titania and titania-**platinum** and titania-ruthenium oxide and ruthenium oxide-alumina catalysts)

RN 121-75-5 HCAPLUS

CN Butanedioic acid, [(dimethoxyphosphinothioyl)thio]-, diethyl ester (9CI)
 (CA INDEX NAME)



L27 ANSWER 19 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1991:11610 HCAPLUS

DOCUMENT NUMBER: 114:11610

TITLE: Photocatalytic degradation of organophosphorus insecticides in aqueous semiconductor suspensions
 AUTHOR(S): Harada, Kenji; Hisanaga, Teruaki; Tanaka, Keiichi
 CORPORATE SOURCE: Natl. Chem. Lab. Ind., Tsukuba, Japan
 SOURCE: Water Research (1990), 24(11), 1415-17
 CODEN: WATRAG; ISSN: 0043-1354

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Dimethyl-2,2-dichlorovinyl phosphate (DDVP) and dimethyl-2,2,2-trichlor-1-hydroxyethyl phosphonate (DEP) were degraded in the presence of suspended TiO₂ by illumination with a super-high pressure Hg lamp or by exposure to sunlight. Pt-loading to TiO₂ enhanced the degradation rates 4.5- and 6-fold for DDVP and DEP, resp. The addition of H₂O₂ to the suspension also enhanced the rates 10- and 2-fold for the former and latter, resp. The final degradation products were Cl⁻, PO₄³⁻, H⁺, and CO₂, and one of the intermediates was HCHO.

IT 7440-06-4, **Platinum**, uses and miscellaneous

RL: CAT (Catalyst use); USES (Uses)

(catalysts, **organophosphorus insecticide** photolysis in wastewater in presence of titania and)

RN 7440-06-4 HCAPLUS

CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

L27 ANSWER 20 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1990:497711 HCAPLUS

DOCUMENT NUMBER: 113:97711

TITLE: **Decomposition** of an **organophosphonate** compound (dimethylmethylphosphonate) on the nickel(111) and **palladium**(111) surfaces

AUTHOR(S): Guo, X.; Yoshinobu, J.; Yates, J. T., Jr.

CORPORATE SOURCE: Surf. Sci. Cent., Univ. Pittsburgh, Pittsburgh, PA, 15260, USA

SOURCE: Journal of Physical Chemistry (1990), 94(17), 6839-42
 CODEN: JPCHAX; ISSN: 0022-3654

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The **decomposition** of a model **organophosphonate** compound, di-Me methylphosphonate (DMMP), by Pd(111) and Ni(111) surfaces has been studied by using Auger spectroscopy and temperature-programmed reaction

spectroscopy. In both cases, in the absence of O₂, thermal **decomposition** of DMMP occurs [Pd, below 300 K; Ni, below 340 K] based on the observation of desorption-limited H₂ and CO evolution. Phosphorus is deposited on both Pd(111) and Ni(111) surfaces following the DMMP **decomposition**. Oxidation at 1075 K removes the surface phosphorus on Pd(111). On Ni(111), however, surface phosphorus cannot be removed by oxidation at 1075 K, nor is preoxidized Ni(111) active for phosphorus removal at 1075 K. By comparison with similar expts. on Mo(110), it appears that the early transition metals may be more suitable for the catalytic oxidation of **organophosphonate** compds., on the basis of the lower temperature for sustained removal of surface phosphorus by oxygen on Mo(110) [900 K] compared to Pd(111) [1075 K].

L27 ANSWER 21 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1988:423040 HCAPLUS

DOCUMENT NUMBER: 109:23040

TITLE: Gas-surface reaction dynamics and the **decomposition** and reaction of organo-phosphonate esters

AUTHOR(S): Weinberg, W. H.

CORPORATE SOURCE: Div. Chem. Chem. Eng., California Inst. Technol., CA, USA

SOURCE: Report (1986), ARO-20152.12-CH; Order No. AD-A175699/8/GAR, 3 pp. Avail.: NTIS From: Gov. Rep. Announce. Index (U. S.) 1987, 87(8), Abstr. No. 713,677

DOCUMENT TYPE: Report

LANGUAGE: English

AB Inelastic electron tunneling spectroscopy has been used to characterize the adsorption and **decomposition** of a number of organo-phosphonate esters on aluminum oxide surfaces as a function of surface coverage and surface temperature. Technol. advances have been made in the measurement of inelastic electron tunneling spectra including a rapid spectral measurement technique and a simple technique for background removal. A microreactor which allows rates of heterogeneously catalyzed surface reactions to be measured at pressures from below .0000001 Torr to one atmospheric

has been constructed. This microreactor has been used to measure the rate of **decomposition** of ammonia, the inhibition by hydrogen in the rate of ammonia **decomposition**, and the rate of exchange of deuterium into NH₃ on a platinum surface. A microscopic model has been developed that described these reactions for pressures between .0000001 and 1 Torr and temps. between 450 and 1250 K.

L27 ANSWER 22 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1986:548221 HCAPLUS

DOCUMENT NUMBER: 105:148221

TITLE: Stabilization of tricyclazole and organophosphate mixture

INVENTOR(S): Hirabayashi, Yoshinori; Okawa, Tetsuo; Ota, Masaaki; Goto, Minoru; Sakamoto, Akira

PATENT ASSIGNEE(S): Kumiai Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

| | | | | |
|-------------|----|----------|----------------|----------|
| JP 61109703 | A2 | 19860528 | JP 1984-230245 | 19841102 |
| JP 04075881 | B4 | 19921202 | | |

PRIORITY APPLN. INFO.: JP 1984-230245 19841102

AB Metallic salts and metallic halogen compds. are stabilizers for a composition containing tricyclazole and **organophosphoric** acid ester agrochems. Thus, a tricyclazole-MEP mixture containing FeCl₃ was sealed in a brown jar and kept at 40° for 30 days. The **decomposition** rate of tricyclazole and MEP was 2.2 and 3.3%, resp., whereas that of the control without FeCl₃ was 91.7 and 83.2%, resp.

IT **7646-85-7**, uses and miscellaneous **7733-02-0**
 RL: USES (Uses)
 (stabilization of tricyclazole and **organophosphate** ester by)

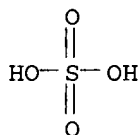
RN 7646-85-7 HCAPLUS

CN Zinc chloride (ZnCl₂) (9CI) (CA INDEX NAME)

Cl-Zn-Cl

RN 7733-02-0 HCAPLUS

CN Sulfuric acid, zinc salt (1:1) (8CI, 9CI) (CA INDEX NAME)



● Zn

L27 ANSWER 23 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1986:202292 HCAPLUS

DOCUMENT NUMBER: 104:202292

TITLE: **Decomposition of organophosphorus pesticides** by homoionic clays from some soils of eastern Himalayan regions

AUTHOR(S): Sarkar, Anupam; Sarkar, Asamanja; Sarkar, Apurba; Sarkar, Rama

CORPORATE SOURCE: Dep. Chem., North Bengal Univ., Darjeeling, 734430, India

SOURCE: Journal of the Indian Society of Soil Science (1985), 33(3), 520-2
 CODEN: JINSA4; ISSN: 0019-638X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The **decomposition** of some **organophosphorus pesticides** (O-alkyl O,O-di-p-nitrophenyl phosphorothionates) by homoionic clays (Na⁺, Cu²⁺, Al⁺) extracted from soils of eastern Himalayan region was studied at room temperature (around 25°). In all cases, the catalytic **decomposition** of the **pesticides** gave p-nitrophenol [100-02-7]. Very good pseudo-1st order kinetics was obtained indicating that the **decomposition** occurred essentially by P-O (aryl) bond cleavage. The rate of **decomposition** at pH 7 increased in the following order: Na clay < Cu clay < Al clay.

L27 ANSWER 24 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1985:591409 HCAPLUS
 DOCUMENT NUMBER: 103:191409
 TITLE: Hydrolytic degradation of insecticides
 AUTHOR(S): Petrova, T. M.
 CORPORATE SOURCE: Vses. Inst. Zashch. Rast., Pushkin, USSR
 SOURCE: Agrokimiya (1985), (8), 93-9
 CODEN: AGKYAU; ISSN: 0002-1881
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian

AB At pH 7 and 50°, the half life of volaton (I) [14816-18-3], Gardona (II) [22248-79-9], and Basudin (III) [333-41-5] was 21 h, 12 and 9 days, resp. At pH 3 and 5° or 60°, the half life of II was 90 and 45 days, resp., whereas that of III was 51 days at 35°. At pH 10, 50% of II and III **decomposed** within 24 h at 60 and 35°, resp. CuCl₂ hastened the hydrolysis of III more than did ZnSO₄. Cu oxychloride at 0.6% inhibited, whereas 0.1% CuSO₄ hastened, the **decomposition** of I, III, and Dursban [2921-88-2]. Acid and neutral hydrolysis dealkylates the **organophosphorus** insecticides, whereas alkaline hydrolysis breaks the P-O bond. Thus, at pH >8 Sumithion [122-14-5] was degraded to 3-methyl-4-nitrophenol [2581-34-2] and III to 2-isopropyl-4-methyl-6-oxopyrimidine [2814-20-2], whereas at pH <7 Sumithion was converted to demethylsumithion [4321-64-6] and I, II, III, carbophos [121-75-5], Actellic [29232-93-7], and Dursban lost their corresponding alkyls. Foliar sprays with microfertilizers containing Cu, Zn, and Mn hastened detoxication of I, III, and carbophos on the foliar surface and in whole cabbage plants, whereas B and Mo retarded the **decomposition**. Com. application with Vuxal (a B-Mn fertilizer) retarded the I degradation in sugar beet leaves by 8-12 days. Fungicidal sprays with CuSO₄ hastened, whereas Cu oxychloride delayed, I degradation in potato leaves. The microfertilizers altered the rate of insecticide degradation on the surface of foliar cuticles more than inside the plant cells.

IT 7440-66-6, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
 (**organophosphorus insecticides** hydrolysis response to)

RN 7440-66-6 HCAPLUS

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

L27 ANSWER 25 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1976:83544 HCAPLUS
 DOCUMENT NUMBER: 84:83544
 TITLE: Thermal **decomposition** and isomerization of platinum(II) phosphine dihalide complexes
 AUTHOR(S): Scott, Charles E.; Mastin, S. H.
 CORPORATE SOURCE: Dep. Chem., Washington Univ., St. Louis, MO, USA
 SOURCE: Thermochemica Acta (1976), 14(1-2), 141-50
 CODEN: THACAS; ISSN: 0040-6031
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The thermal **decomposition** and cis-trans isomerization of square planar Pt(II) complexes of the type PtL₂X₂ (L = **organophosphorus** ligand and X = halide) are reported. It is shown by thermogravimetric measurements that phenyl loss is the rate-determining step in the

decomposition of arylphosphine complexes and that increased phenyl substitution in the phosphine ligand decreases the thermal stability of the complex. Thermogravimetric **decomposition** of such complexes in an air atmospheric is suggested as a method of **platinum** anal.

L27 ANSWER 26 OF 26 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1969:102828 HCAPLUS

DOCUMENT NUMBER: 70:102828

TITLE: Titrimetric method for determining phosphorus in
difficultly **decomposable**
organophosphorus compounds

AUTHOR(S): Tsyganova, M. F.; Novikova, K. F.

CORPORATE SOURCE: All-Union Sci.-Res. Inst. Chem. Means Plant
Protection, Moscow, USSR

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AB Conditions were found for the titrimetric determination of P in difficulty
decomposed P-organic compds. The compds. are mineralized by the
Schoeniger method after adding some paraffin. Phosphates formed are
dissolved in HNO₃ and after adding 0.5% Chrome Azurol S are titrated with
0.01M La(NO₃)₂ from yellow to violet. The error of the method is
±0.25% absolute

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